Pesticide Incident Reporting and Tracking Review Panel

2008 Annual Report

A report to the Governor, agency heads, the Legislature and the public as required by Chapter 380, Laws of 1989, and RCW 70.104.

Approved (excluding Executive Summary) by the Pesticide Incident Reporting and Tracking Review Panel September 17, 2009

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Report suspected pesticide-related illness to Washington State Department of Health at the toll-free number 1-877-485-7316.

Washington State Department of Health
Division of Environmental Health
Office of Environmental Health Assessments
Pub #334-182

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List of Acronyms

DOH	Washington State Department of Health
DOSH	Division of Occupational Safety and Health
DPP	Definitely, Probably, or Possibly
Ecology	Washington State Department of Ecology
EPA	United States Environmental Protection Agency
HCP	Health Care Provider
L&I	Washington State Department of Labor and Industries
NIOSH	National Institute for Occupational Safety and Health
NPDES	National Pollutant Discharge Elimination System
NOC	Notice of Correction
NOI	Notice of Intent
PCO	Pest Control Operator
PIRT	Pesticide Incident Reporting and Tracking
PUR	Pesticide Use Reporting
RCW	Revised Code of Washington
SPI	Structural Pest Inspection
UPEST	Urban Pesticide Education Strategy Team
UW	University of Washington
WAC	Washington Administrative Code
WDO	Wood Destroying Organism
WISHA	Washington Industrial Safety and Health Act
WAPC	Washington Poison Center
WPS	Worker Protection Standard
WSDA	Washington State Department of Agriculture
WSU	Washington State University

STATE OF WASHINGTON
PESTICIDE INCIDENT REPORTING AND TRACKING REVIEW PANEL
P.O. Box 47846
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September 21, 2009

Panel Correspondence

In March 2009, the Washington State Pesticide Incident Reporting and Tracking Review (PIRT) Panel approved the Executive Summary for the 2008 PIRT Panel Report. This summary included a Current Issues section which addressed the potential effects of the 2009-2011 proposed budget cuts to the Washington Department of Health Pesticide Program, and the Washington Poison Center. These effects included a reduction in the ability to collect data on pesticide incidents in Washington State, and the likely need for emergency health services in lieu of services provided by the Poison Center.

The Department of Health held the approved report until July 2009, when a new version of the Executive Summary was presented to the PIRT Panel. This new version omitted discussion of the potential effects of the proposed cuts. At the August 2009 PIRT Panel meeting, Mark Calkins of the Attorney General's Office provided the panel with his interpretation of the Revised Code of Washington (RCW 70.104.090) language that indicates that one of the responsibilities of the panel is "reviewing and approving an annual report prepared by the Department of Health to the governor, agency heads, and members of the legislature, with the same available to the public." Mr. Calkins stated that in his view "prepared" meant "to write" and gave authorship and control of the content of the report to the Department of Health.

The PIRT Panel felt that the effects of the proposed cuts on pesticide incident reporting and tracking, as well as the potential impacts on the public's health, were timely and relevant to the Report. The PIRT Panel, therefore, approves the 2008 Report with the exception of the Executive Summary.

Sincerely,

Gregg L. Grunenfelder
PIRT Chair

Executive Summary

The annual report summarizes pesticide incident data collected by agencies during 2007 and activities of the Pesticide Incident Reporting and Tracking Review Panel for 2008.

The Legislature created the Pesticide Incident Reporting and Tracking (PIRT) Review Panel to monitor pesticide-related incidents that have suspected health or environmental effects (RCW 70.104.070 through 70.104.090). PIRT Panel members include representatives of six state agencies and the Washington Poison Center (WAPC) that respond to statewide incidents, two university members, a Governor-appointed toxicologist, and a member representing the public.

Member agencies conduct pesticide incident investigations in accordance with their statutory responsibilities and report findings to the PIRT Panel for evaluation. PIRT submits an annual report summarizing pesticide incidents to the Legislature, Governor, agency heads, and the public. This 2008 report presents individual and combined agency data for 2007 and a summary of the activities of PIRT and its member agencies for 2008.

Panel Activities and Issues for 2008

The PIRT Panel convened 12 times in 2008, meeting in Tumwater, Seattle, Tukwila, and Yakima. Ongoing, mandated activities include reviewing member agencies' independent strategies to reduce pesticide incidents, evaluating combined PIRT data, and reporting on product labels that are inadequate or unclear. In 2008, PIRT monitored many topics (Appendix G) including: pesticide drift, the pesticide air monitoring study, use of pesticides in schools, West Nile virus (WNV), the Worker Protection Standard, illnesses related to pyrethroid insecticides, pesticide use reporting, and the use of pesticides for roadside vegetation management and forestry.

Findings and Recommendations

The PIRT Panel presents the following findings and recommendations based on 2007 incident information.

1. About one-third of the 207 Department of Health cases classified as definitely, probably, or possibly (DPP) related to pesticide exposure were human exposures related to agriculture. About one-half (33) of these cases were exposures from drift or residues. About 20 percent of the 177 Department of Agriculture (WSDA) cases were also from possible drift exposure. Training programs, application methods and decision support tools that reduce pesticide drift have potential to reduce these incidents.

Pesticide drift or suspicion of drift also causes distress to workers and to the public. Land use changes may increasingly put families close to agricultural operations that use pesticides. The Department of Health Pesticide Program has

recently demonstrated leadership over the 2007-2009 Pesticide Air Monitoring Project.[1] The Legislature directed the agency to administer air monitoring programs conducted by the University of Washington and Washington State University. These publicly funded studies on organophosphate insecticide/fumigant concentrations in ambient air provide high-quality information to residents, pesticide users, and regulators that will help institute appropriate prevention tactics. The department should be commended for its leadership and commitment to acquiring and dispersing critical information, and should continue to provide such support as recommended by the technical review panel.

2. Half of the cases the Department of Health identified as affecting agricultural workers related to individuals "handling" pesticides at the time of their exposure. Training programs are important for increasing worker proficiency and emphasizing rigorous implementation of worker protection standards established by the Environmental Protection Agency (EPA). Cholinesterase monitoring and associated compliance investigations conducted by Labor and Industries (L&I) continue to provide insight about potential pesticide exposures among pesticide handlers[2] and can identify methods for improving practices.[3]

3. Two thirds (147/207) of the health department's 2007 DPP cases were not associated with agriculture. This finding is likely due to effective incident reporting from WAPC, which serves urban populations and medical facilities. Of the 147 exposures, 37 (25 percent) of the individuals were working at the time of exposure and 110 (75 percent) were not at work. One hundred twelve (76 percent) were at a residential site at the time of their exposure. Accidents or spills, treatments of insects in or around the home, herbicide treatments, and treatments to people or pets for lice or fleas were major sources of these incidents.

4. Thirty-one DPP cases investigated by the agency were related to pesticide exposure of children. Nineteen of the children were under the age of 6. Twelve incidents resulted from the pesticide being within the reach of children and accidentally released or mistakenly ingested. The lack of child-proof devices on pesticide containers, particularly those for home use, should receive more attention. Appendix C summarizes the health department's DPP cases that involve children.

5. West Nile virus was detected in mosquitoes, birds, horses and humans in Washington in 2008. Risk of WNV-related pesticide exposure incidents is now increasing due to the likelihood for human disease and the desire to apply pesticides to kill adult mosquitoes if prevention activities do not occur or fail. The Department of Health, WSDA, Ecology, and L&I can each capture and share information about whether the response to WNV causes an increase in pesticide exposure incidents. The Legislature and local governments should continue their

[1] http://www.doh.wa.gov/ehp/pest/drift.htm
[2] Pesticide handlers do work that includes applying, mixing/loading, or transporting pesticides, or maintaining pesticide equipment.
[3] http://www.lni.wa.gov/Safety/Topics/AtoZ/Cholinesterase/files/DOSH_ChE_Report07_Final_010407.pdf

vigilance with respect to WNV prevention, integrated pest management programs to reduce mosquito populations in high-risk areas, and public notification efforts.

6. Pyrethroid and pyrethrin-related illnesses and injuries continue to increase in Washington. Findings from illness investigations are a) rates of cases are increasing over time, b) respiratory symptoms are the most common reported symptoms, c) a small percentage of cases resulted in moderate to severe medical outcomes, and d) people with pre-existing conditions appear to be at higher risk for moderate to severe reactions. The increase in reported cases probably reflects the predominance of pyrethroids and pyrethrins in home use insecticides such as foggers. The state health department's prevention activities in 2008 included: initiating a media campaign and developing a Web site related to fogger hazards, alerting the medical director at WAPC, and co-authoring two articles to notify the public health and medical community of the potential hazards of pyrethroids.[4]

The health department and WSDA also provided data and recommendations (Appendix F) to the EPA on labeling and additional packaging safety restrictions for total release foggers that are used in the home for control of insects, particularly fleas. Recommendations include reducing package size, improving child-proof packaging, having a safety shut-off feature, and providing clearer instructions on leaving the premises during treatment, and ventilating properly prior to returning.

7. Financial penalties may be insufficient to prevent or deter pesticide use violations that threaten people and the environment. Financial penalties appear to be relatively low when compared to likely medical and emotional costs of potential injuries to people and potential damage to the environment. More attention should be given to the penalty structure used by, and recent penalties levied by, WSDA, L&I, and Ecology.

2007 Summary Data for PIRT Agencies

The following agency summaries identify key points from the analysis of 2007 pesticide incident data.

Department of Agriculture

In 2007, WSDA investigated 177 pesticide-related complaints. After investigation, it was determined that 103 involved pesticide applications and 69 were unrelated to actual applications. The application status of five complaints was not specified. During 2007, 104 of WSDA complaint investigations resulted in some type of violation. Drift continues to be one of the most frequent types of complaint involving pesticide applications. The WSDA received 38 complaints about drift in general and 20 complaints specifically about human exposure due to drift. The WSDA also received numerous complaints about licensing and

[4] "*Illnesses and injuries related to total release foggers – eight states, 2001-2006,"* Morbidity and Mortality Weekly Report, October 17, 2008. (Reprinted in Journal of the American Medical Association, December, 2008). *"Pyrethrin and pyrethroid illness in the Pacific Northwest,"* Public Health Reports, Jan - Feb 2009, Vol. 124.

records, misuse, Structural Pest Inspections, and distribution, sales and registration. Other less frequent complaints concerned such issues as water contamination, animal deaths, and bee kills. Washington State Department of Agriculture assessed $25,175 in monetary penalties during 2007. In addition, there were 12 individual or business license suspensions from periods of two days to five years.

Department of Ecology

In 2007, Department of Ecology (Ecology) investigated 14 pesticide-related complaints involving threats to ground or surface water, unsafe pesticide storage and handling, pesticide disposal or waste concerns, and spills or fires. Ecology is responsible for oversight of contaminated areas requiring cleanup or monitoring. During 2007, Ecology placed 21 new pesticide-contaminated sites on the Toxic Cleanup Program list. Ecology's Water Quality program is responsible for aquatic pesticide and mosquito control permitting, as detailed in Ecology's summary. Ecology completed a report on pesticides and other contaminants in Yakima River fish in 2007 and has two studies under way on pesticides in Washington waterways.

Department of Health

In 2007, the agency investigated 247 pesticide incidents involving 310 individuals. Of the 310 illnesses/injuries, 207 were classified as DPP related to pesticide exposure.

There were 147 non-agricultural DPP cases in 2007. Thirty-seven of these occurred on the job (occupational) and 110 were non-occupational. Of the 37 occupational cases, 20 were handling pesticides at the time of exposure. Ninety-eight of the 110 non-agricultural, non-occupational exposures occurred in residential settings.

Sixty of the 2007 DPP cases were related to agriculture. Thirty-four agricultural cases were associated with the tree fruit industry, five with other fruit, eleven with field and vegetable crops, and six with other agricultural commodities. The remaining four cases were not associated with applications to specific crops. Forty-four agricultural cases involved agricultural workers. Of these, 27 workers were handling pesticides at the time of their exposure.

Department of Labor and Industries

L&I's Division of Occupational Safety and Health (DOSH) Services conducted 28 pesticide-related safety and health inspections in 2007. All of these inspections resulted in general, serious, or failure to abate citations being issued to the employer. L&I assessed $30,935 in monetary penalties for these citations.

During 2007, 226 employers and 1,857 pesticide handlers participated in baseline cholinesterase testing. Of the 386 handlers who were tested again at least once during the application season, 49 had at least one cholinesterase depression at a level requiring the employer to evaluate pesticide handling practices. Eighteen were temporarily removed from exposure to covered pesticides because of a cholinesterase depression at the work removal level. In

2007, the cholinesterase monitoring program changed to a new testing laboratory, which resulted in increased test variability compared to 2006.

In 2007, the L&I Insurance Services Division, Claims Administration Program received 104 claims that appeared to be related to pesticide illness and referred these to the health department. Of the 104 claims, 83 were compensated by L&I as being work-related injuries, 20 were rejected, and one was kept on salary. Seventy-six were related to agriculture and 28 were non-agricultural. The Department of Health investigated the 104 claims and classified 39 agricultural and 24 non-agricultural claims as having signs or symptoms that were DPP related to the pesticide exposure.

Of the 39 DPP agricultural workers, 28 claims involved workers in the tree fruit industry, eight claims involved workers in other food crop production industries, and the remaining three claims involved workers in other agricultural industries.

Washington Poison Center

In 2007, WAPC provided immediate professional medical advice regarding pesticide-related questions and emergencies to 2,077 callers. Of the 2,077 calls, 1,182 involved insecticides and 168 involved insect repellents. Herbicides were involved in 358 of the calls. Thirty pesticide-related human exposure calls involved moderate health effects and no calls involved major health effects. One accidental exposure case that resulted in death was classified by the health department as insufficient information because the identity of the herbicide involved could not be confirmed. Department of Health screened all human pesticide-related illness calls to WAPC and investigated 183 calls where the caller sought medical care and the exposure was not part of a suicidal gesture. One hundred thirty-two of these calls involved illnesses determined to be DPP related to pesticide exposure.

Conclusion

1. The number of DOH DPP cases in Washington has been fairly steady at approximately 180-233 cases per year since 2003. Most have had low to mild symptoms, but moderate and severe symptoms (including one death) have occurred in about 14 percent of these cases since 2005. These numbers likely underestimate the actual occurrence of pesticide- related illness and injuries that occur.[5] Many people with mild symptoms do not seek health care, physicians may fail to recognize and report pesticide related illness, and workers who perceive threats to job security may hesitate to report. Washington's pesticide exposure surveillance and investigation efforts rely on many agencies and collaborators to collect sufficient data to target needed, effective prevention enhancement activities.

[5] See "Improving Data Quality in Pesticides Illness Servelliance" June 17, 2004. http://www.doh.wa.gov/ehp/oehas/publications_pdf/improving_data_quality_in_pesticide_illness_surveillance-2004.pdf

2. Pesticide related research and worker training programs are important components of incident prevention programs and should continue.

   - L&I's Cholinesterase Rule that mandates monitoring possible exposures of agricultural workers to organophosphate and carbamate insecticides has shown possible exposure pathways and allow growers to institute preventative measures.
   - Cooperative bilingual training programs in pesticide safety by WSDA, DOH, and L&I play an important role in employee protection and incident prevention for Spanish-speaking agricultural labor.
   - The Pesticide Air Monitoring Project[6] and the Pest Management Transition Project[7] provide information that will help growers, pesticide regulators and the state to make sound decisions on pesticide use and regulations. Support for these activities should continue.

[6] http://www.doh.wa.gov/ehp/pest/drift.htm
[7] http://pmtp.wsu.edu/

Introduction

Created in 1990, the Pesticide Incident Reporting and Tracking Review Panel continues to protect citizens against pesticide exposure through the understanding of incident causes and by developing prevention strategies.

The Pesticide Incident Reporting and Tracking (PIRT) Review Panel was created to monitor pesticide-related incidents that have suspected health or environmental effects (RCW 70.104.070 through 70.104.090). The panel consists of representatives of the Washington State Departments of Agriculture (WSDA), Ecology (Ecology), Health, Labor and Industries (L&I), Natural Resources (DNR), and Fish and Wildlife (DFW), representatives of the University of Washington (UW), Washington State University (WSU), and Washington Poison Center (WAPC), a practicing toxicologist,[8] and a member of the public (Appendix A).

Member agencies and the WAPC investigate pesticide incidents in accordance with their specific statutory responsibilities and report findings to the panel for evaluation. The panel is mandated to perform the following activities:

- Centralize the receipt of information regarding pesticide complaints and their investigations and monitor timeliness of agencies' response to complainants.
- Review and recommend procedures for investigation of pesticide incidents.
- Identify inadequacies of pesticide regulations to protect public health.
- Submit an annual report summarizing pesticide incidents to the Governor, agency heads, the Legislature, and the public.

The panel has no regulatory authority, but serves a review function and makes recommendations to the agencies, to the Governor, the Legislature, and to federal agencies such as Environmental Protection Agency and National Institute of Occupational Safety and Health (NIOSH).

This 2008 report is the panel's seventeenth annual report. It summarizes pesticide-related incident reports, complaints or calls to WSDA, the health department, Ecology, L&I, and WAPC. The report:

- Provides analyses of each agency's incidents and follow-up activities for 2007.
- Describes panel and member agency activities for 2008.

[8] Dr. Steve Gilbert was the PIRT toxicologist through April 2008. PIRT lacked a toxicologist for the remainder of 2008 as one was not appointed by the Governor.

2007 Summary Data

Table 1 summarizes 2007 pesticide-related data for each agency. Pesticide-related data from each agency are described in detail in the following Agency Summary Reports. Individual incident descriptions are provided in Appendix C.

Table 1. Individual Agencies' Summaries of Their Specific Pesticide Events, 2007

Department of Agriculture: 177 Complaints Resulting in 104 Violations			
Complaints	**177**	**Violations**	**104**
Location of Complaint		Violations by Type of Activity	
Eastern Washington	98	Agriculture	33
Western Washington	79	Commercial/Industrial	33
		Structural Pest Inspection	10
		Residential (homeowners)	5
Enforcement Actions*	**104**	Right-of-way	5
Notice of Correction (NOC)	60	Other (license/records)	18
Notice of Intent/Admin Action (NOI)	26		
Advisory letter/Warning letter	5	**License Involved with Violations**	**104**
Referred	2	Commercial applicator	38
Verbal warning	11	Unlicensed	34
Notice of Correction/Notice of Intent	0	Private applicator	11
		Structural Pest Inspection	7
*No action indicated	73	Public operator	5
		Dealer	2
		Unknown	3
		Not applicable	2
		Several	2

Department of Health: 247 Incidents (Events) Involving 310 Individual Cases			
Type of Incident	**247**	**Classification of Cases**	**310**
Agriculture	75	Definite	36
Residential	132	Probable	63
Commercial/Industrial	15	Possible	108
Other	17	Suspicious	6
Unknown	8	Unlikely	41
		Insufficient information	56
Childhood Cases < 18 years old		**Definite, Probable, or Possible Cases**	
Definite, probable, or possible cases	31	Agriculture	60
		Non-agriculture	147

Department of Labor and Industries: 28 Industrial Safety and Health Inspections and 104 Worker Compensation Claims			
Pesticide-related Inspections	**28**	**Worker Compensation Claims**	**104**
Serious and/or General Citations	28	Agriculture	76
No citations	0	Non-agriculture	28
Type of Business		**Benefits**	
Orchard	13	Accepted – Medical/time loss	83
Other agricultural	11	Rejected	20
Non-agricultural	4	Pending	0
		Kept on salary	1

Department of Ecology: 14 Pesticide Complaints (Complaints may involve more than one category)	
Threats to ground or surface water	8
Spills or fires	9
Pesticide disposal or waste concerns	6
Unsafe pesticide storage or handling	3

Washington Poison Center: 2,077 Human Exposure Pesticide-Related Calls	
Department of Health-identified calls for investigation (see the agency's criteria for investigation, Page 50)	183

Combined 2007 Agency Data

The agency workload related to pesticide incident response, regulation of licensed pesticide professionals, and calls made to WAPC for the years 2003 - 2007 are listed in Table 2.

Table 2. Agency Workload Related to Pesticide Regulation and Incident Response, 2003 - 2007

	2003	2004	2005	2006	2007
WSDA Complaints	222	200	193	206	177
Ecology Complaints	33	29	39	34	14
Department of Health Events	242	245	220	232	247
Department of Health Individuals Involved	275	269	252	254	310
DOSH Inspections	22	43	31	17	28
L&I Claims	133	101	93	110	104
WAPC Calls	1,937	2,342	2,430	2,144	2,077

Some incidents involved more than one agency. The PIRT was unable to provide a precise number of unique incidents across all agencies because some agency data sets represent the total number of people involved and others count an event involving many people as a single investigation. When two agencies are involved, an incident may be counted as one investigation by WSDA and L&I Division of Occupational Safety and Health (DOSH) but may appear in the Department of Health data set as multiple cases (i.e. people ill from pesticide exposure).

It is difficult to further summarize aggregate PIRT data because each agency responds to different types of pesticide problems. The types of data are listed below. Agency data are more completely described in report chapters and appendices.

- WSDA investigates complaints about misuse or misapplication, licensing, and structural inspections. The WSDA enforces the language on pesticide labels and coordinates with L&I DOSH to enforce the Worker Protection Standard (WPS) for agricultural workers.
- Ecology investigates and enforces remediation of incidents involving spills or environmental contamination by pesticides.
- Department of Health investigates reported cases of suspected pesticide-related illness. Usually, at least one person involved in the pesticide exposure needs to have seen or been referred to a health care provider to trigger a Department of Health investigation.
- L&I DOSH manages the cholinesterase monitoring program, conducts safety and health workplace inspections in agriculture/industry, and investigates employee complaints and referrals from agencies and

others. With WSDA, L&I DOSH enforces the WPS for agricultural workers. L&I DOSH also enforces other workplace safety rules.

- L&I Claims Insurance Services Division adjudicates and administers worker compensation insurance claims related to pesticide exposures.
- WAPC provides information and medical advice to the public and to health care providers who call about pesticides.

Strengths and Limitations of PIRT Data

The strengths and limitations of PIRT data were discussed in depth in the *2004 Annual Report* (Pages 21-26). The limitations of state comparisons of pesticide-related illnesses are also discussed in the *2004 Annual Report*. The *2004 Annual Report* is available on the PIRT website at http://www.doh.wa.gov/ehp/Pirt/.

Agency Response Times

Revised Code of Washington 70.104.080 (Appendix A) specifically directs the PIRT Review Panel to monitor agency response time to pesticide-related incidents for WSDA, Department of Health and L&I. Response time is defined as the interval between initial report of an incident and an agency's first response to the report. The first response may be a phone call, a request for medical or spray records or other agency action. Response time may also be a function of the staffing available, including bilingual staffing. Available agency response times for 2007 are listed in Table 3.

Table 3. Agency Response Times, 2007

Agency Mandates	Agency Response Times
Agriculture • Immediate response when complaints involve humans or animals • All other complaint investigations must be initiated within 48 hours	• 100 percent of human exposure cases within 24 hours* • 88 percent of all cases within 24 hours
Ecology • No legislative mandate for response time.	• All 14 complaints that were a threat to air, water or soil within 24 hours
Health • Hospital admission, death, or threat to public health within 24 hours • All others within 48 hours	• The one death case classified by the health department as "Insufficient Information" within 24 hours of report receipt • No severe cases in 2007 • 94 percent of all cases within 48 hours
Labor and Industries (DOSH) • Serious complaints within 30 days • All others within 120 days	• Majority within 30 days • All within 120 days

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Agriculture

Washington State Department of Agriculture's summary of pesticide-related complaint investigations during 2007.

Background

The Pesticide Management Division of WSDA protects human health and the environment by ensuring the safe and legal distribution, use, and disposal of pesticides in Washington State.

The WSDA investigates all complaints it receives concerning possible pesticide misuse, storage, sales, distribution, applicator licensing, and building structure inspections for wood destroying organisms (WDO). The division also inspects marketplaces, importers, manufacturers, and pesticide application sites for compliance with state and federal laws and regulations on a non-complaint basis.

Complaints

During 2007, WSDA investigated 177 complaints (Table 4). After investigation, WSDA determined that 103 (58 percent) complaints involved pesticide applications and 69 (39 percent) complaints were unrelated to actual applications. The application status of five complaints was not specified. Examples of complaints unrelated to applications were structural inspections or licensing complaints. There were 104 violations associated with the 177 complaints. Appendix C lists all WSDA pesticide-related complaint investigations for 2007. This is the lowest number of complaints that the department has received since PIRT reports started in 1990.

Table 4. WSDA Complaints and Violations, 2003 - 2007

Year	Total Complaints	Violations
2003	222	151 (68%)
2004	200	122 (61%)
2005	193	113 (59%)
2006	206	137 (66%)
2007	177	104 (59%)

Location of Complaints

There were significant differences in population, types of pest problems, and the nature of complaints between the eastern and western portions of the state. In general, Western Washington complaints were about structural pest inspections (SPI), homeowner complaints about drift, intentional misuse, and unlicensed applicators. Most Eastern Washington complaints were about agricultural applications and drift. Drift continues to be one of the most frequent types of complaint involving pesticide applications. However, complaints about potential misuse such as the wrong product used to control pests or complaints about a

neighbor's use increased in frequency this year. Licensing, records, and SPI were the most frequent non-pesticide application complaints. With the exception of drift, complaints in 2007 continue to cover more diverse topics than in the early years of the PIRT report.

Potential instances of misuse are diverse. Most are from residential areas and may be about a neighbor using a pesticide to control weeds or trees that are obstructing views.

In 2007, there were four complaints about bee kills. This in an increase in complaints and may be a secondary result of beekeepers observing hives more closely due to reports of Colony Collapse Disorder. Beekeepers worldwide have been reporting unusually high losses of bees and have named this Colony Collapse Disorder. No full explanation for this is known as yet and the hive deaths may be a result of a combination of factors, including pesticides.

In 2007, 98 (55 percent) of complaint investigations occurred in Eastern Washington and 79 (45 percent) in Western Washington.

Table 5 lists the counties with the most complaint investigations from 2003 through 2007.

Table 5. WSDA Counties with the Most Complaints, 2003 - 2007

2003		2004		2005		2006		2007	
King	23	King	28	Spokane	22	Spokane	20	Pierce	14
Pierce	22	Grant	20	King	20	Grant	19	Grant	13
Grant	19	Spokane	17	Chelan	18	Pierce	18	Spokane	13
Spokane	19	Benton	15	Grant	16	Yakima	15	Snohomish	12
Yakima	13	Yakima	15	Yakima	12	King	13	King	10
Benton	12	Walla Walla	11	Douglas	11	Douglas	11	Benton	10
Chelan	12	Pierce	11	Pierce	10	Okanogan	10	Yakima	10
Clark	11	Snohomish	10	Benton	8	Franklin	9	Chelan	8
Multiple	10	Chelan	8			Whatcom	8	Whatcom	8
								Whitman	8

Response Time

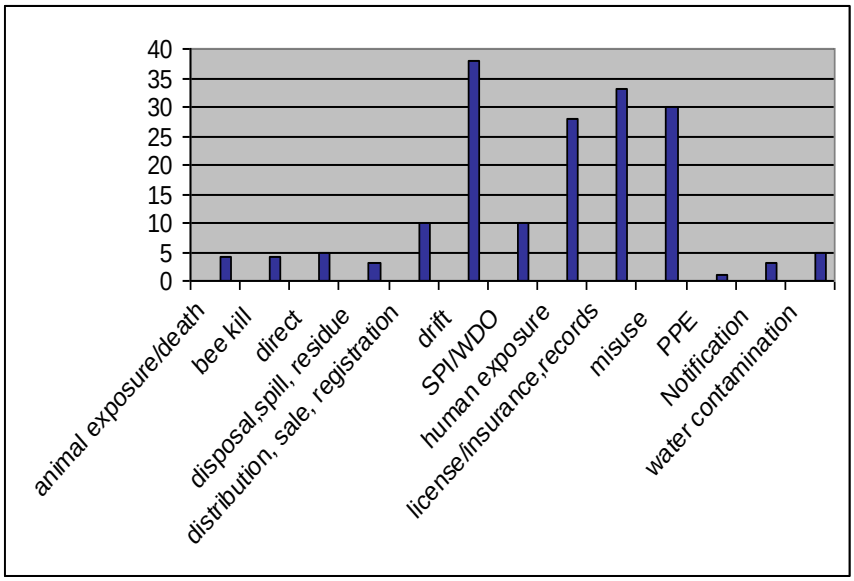
In 2007, WSDA responded within one working day for 155 (88 percent) of the 177 complaints.

Nature of Complaints

Complaints for 2007 were categorized according to the nature of the initial complaint received. The categorization of complaints for 2007 is shown in Figure 1. Investigation may find the complaint not valid, substantiate the initial complaint, or identify additional violations. For example, an initial complaint concerns a possible drift. When the agency investigates, it may determine that drift did not occur, but may find that the applicator applied at the wrong rate or did not keep proper records. Although the applicator would not be cited for drift, he or she could be cited for being "faulty, careless, and negligent" or for record-

keeping violations. When complaints are associated with numerous possible violations, the most serious complaint is used to categorize the case. For example, a complaint involving human exposure caused by drift from application by an unlicensed applicator would be categorized as human exposure even if the only final outcome of the case was a NOC for record keeping. However, in general, the initial complaint is a fairly reliable indicator of the final outcome of the case and reflects the concerns of the complainant.

Figure 1. WSDA Nature of Initial Complaints by Number, 2007



In 2007, WSDA received 38 general complaints about drift plus 20 complaints specifically about human exposure due to drift. Of the 20 human exposure drift complaints, it was determined there was some evidence of exposure in seven cases, although two appeared to be odor only. For the 38 general drift cases, 26 were complaints about drift to property, ornamentals or vehicles, and 12 were drift complaints to an agricultural crop or pasture (Table 6). Pesticides moving off-target appears to be one of the major reasons complaints were registered with WSDA. As in previous years, many of these complaints were not substantiated as the damage seen was due to drought, insects or frost, or the person was concerned about possible drift rather than an actual exposure. Non-agricultural complaints from actual applications generally concerned damage to ornamentals from commercial applications or from a neighbor's application, rather than human exposure.

Non-licensed individuals and misuse are two other areas where WSDA received numerous complaints (Table 6). In 2007, WSDA received 26 complaints about improper or no licensing and 30 complaints about direct misapplications or other types of misuse. The number of complaints specific to faulty SPIs dropped to 10 (in addition to complaints about improper SPI licenses or records). There were four reported bee kills for 2007. Insecticide residue was found in one case, no evidence of insecticides were detected in two cases although dead bees were

present, and one case involved bees dying from a normally occurring toxic substance found in linden pollen.

Table 6. Initial Complaints, WSDA Cases, 2007

Animal Deaths/Exposure	4	Human Exposure - Drift	20
Bee Kill	4	Human Exposure - Direct	8
Direct	5	License, Insurance, Records	33
Disposal, Spill, Residue	3	Misuse	30
Distribution, Sale, Registration	10	Notification	3
Drift to Crop	12	Personal Protective Equipment	1
Drift to Property	26	Water Contamination	5

For 2007 cases, the initial complaint was compared to actions taken by the department to see if the violation was related to the complaint; that is, whether the complaint was valid. However, action may not have been taken on the case even though the complaint was valid. For instance, if the violator could not be identified for a drift case, no action could be taken. In 2007, 109 (62 percent) cases had the original complaint verified (i.e., the complaint was valid). Action was taken on 104 cases. The percent of cases where action was taken on the original complaint has been steadily increasing each year. This may reflect that people are better able to recognize pesticide damage as opposed to damage due to drought or insects. It may also mean people have a better understanding of agency roles for enforcement. This trend is allowing the agency to better use resources by investigating valid complaints instead of responding to complaints about issues other than pesticides.

Drift

There were 38 general complaints about drift; WSDA took action on 20 (53 percent) of these (Table 7). There were 20 complaints about drift to humans with seven (35 percent) verified.

Action was taken on six of the human exposure drift cases. No action was taken on the remaining case, as no violations were determined and the complainant did not want to pursue the incident further.

Table 7. Number of WSDA Drift and Human Exposure Complaints, 2007

	Number of Complaints	Complaints Verified	Action*
Drift			
Drift to Property	18	12	NAI - 1, Verbal Warning-2, NOC - 5, NOI - 4
Drift to Crop	12	9	NAI - 3, Verbal Warning - 1, NOC - 2, NOI - 3
Drift to Ornamentals	8	3	Verbal Warning - 1, NOI - 2
Human Exposure			
From Drift	20	7	NAI - 1, NOC - 3, NOI - 3
From Direct	8	4	Verbal Warning - 1, NOC - 3

** NAI = no action indicated, NOC = notice of correction, NOI = notice of intent (Refer to Appendix D, WSDA Enforcement Action Definitions)*

For the purposes of the PIRT report in classifying complaints, actions that the agency took may not be sufficient to determine the scope of actual pesticide incidents. For drift, WSDA needs evidence such as residue, symptoms, or observation to decide if drift had occurred or not. Even if drift was verified, the agency may not be able to take action; for example, if the source of the drift could not be proven. The number of verified drift cases may give a better idea of areas that are problems.

Application Methods

In 2007, WSDA received 17 complaints about aerial applications, 76 complaints about ground applications, one complaint about both an aerial and a ground application, 73 complaints about items other than an application (for example, structural inspections), and ten complaints where the application method was undetermined or unknown.

Violations

Complaint investigations may result in a determination that a violation of state or federal laws or rules has occurred. During 2007, 59 percent of WSDA complaint investigations resulted in some type of violation. Most violations were not severe in nature (Table 8) and most violators were issued a warning or correction notice rather than issued fines or license suspensions.

Type of Activity in Complaints with Violations

Complaints are classified by WSDA according to the following type of activities:

- Agricultural: Incidents occurring in an agricultural environment such as farming, forestry, greenhouses, or Christmas tree farming.
- Commercial/industrial: Incidents by licensed operators making applications to offices, restaurants, homes, and landscapes.
- SPI: A change in law established a separate definition for a license for this work. Replaces the previous WDO incident count. No pesticide applications are made.

- Residential: Includes any application of a pesticide in a residential environment by the homeowner, resident, or neighbor.
- Rights of way: Applications made on public land such as roadways, electric lines, and irrigation canal banks.
- Other: The WSDA code for undefined use and includes licensing, storage, registration, records, and similar activities.

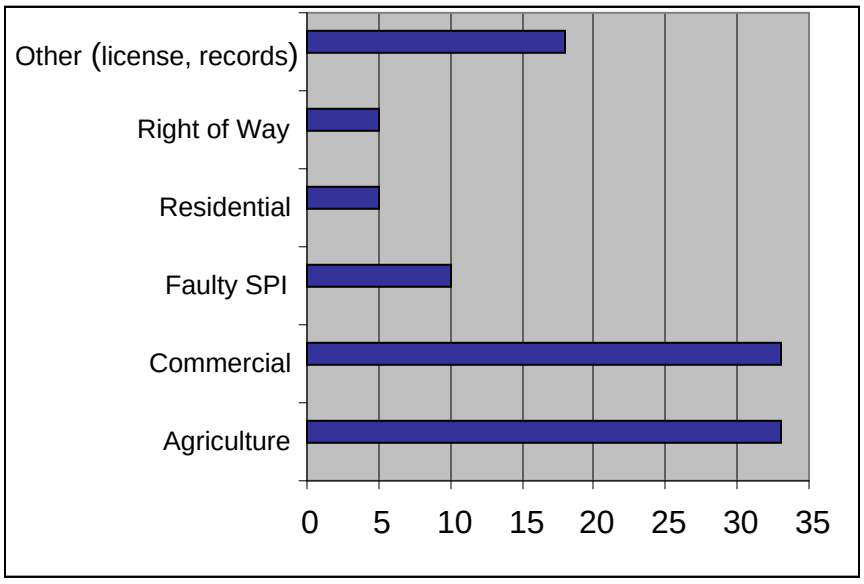
Table 8 shows complaints with violations by type of activity from 2003 through 2007.

Table 8. WSDA Violations by Type of Activity, 2003 - 2007

Activity	2003	2004	2005	2006	2007
Agricultural	39	42	39	42	33
Commercial/Industrial	38	17	36	25	33
Structural Pest Inspection	33	22	8	28	10
Residential (non commercial)	7	5	4	12	5
Right of Way	5	5	5	4	5
Other (licenses, records, etc.)	29	31	21	26	18
Total Violations	***151***	***122***	***113***	***137***	***104***

Figure 2 identifies the violations by type of activity for 2007.

Figure 2. WSDA Violations by Type of Activity, 2007



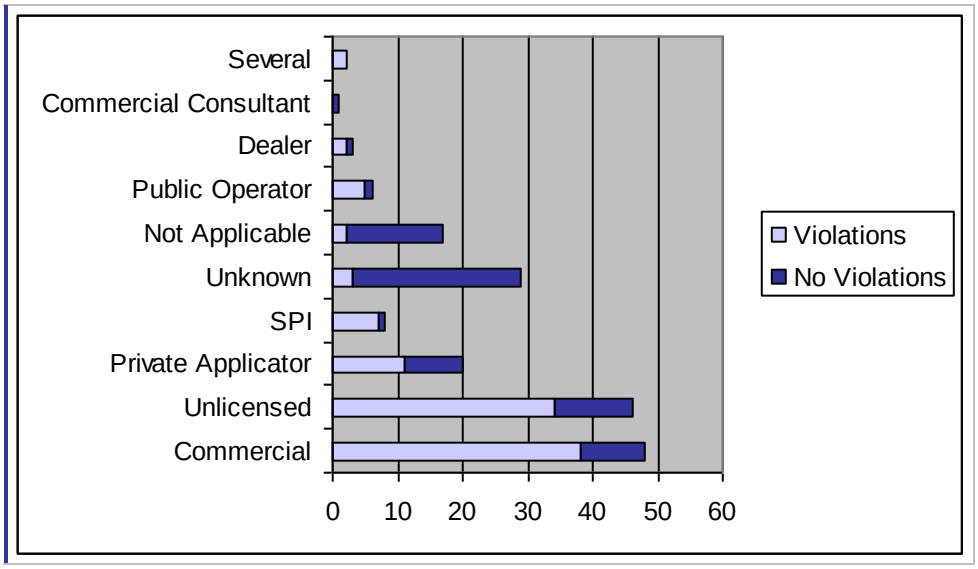
Violations alone do not give an accurate picture of pesticide exposures. For example, if drift occurs and the violator cannot be proven, no action can be taken. Sometimes the applicator has moved away, often out of state, and cannot be located. However, violations generally give a good representative picture of the validity and severity of pesticide incidents.

Type of License in Complaints with Violations

In 2007, WSDA licensed about 5,300 commercial applicators and operators and 11,800 private applicators. WSDA also issued about 9,900 other individual license types for a total of over 27,000 licensees. Although WSDA licenses fewer commercial applicators than private applicators, commercial applicators make many more applications per licensee and more applications on land not owned by the applicator. This increases the probability of complaints for commercial applicators. Further information about WSDA license types is available in Appendix D.

In 2007, commercial applicators were involved in 48 complaints with 38 violations (Figure 3). Private applicators were involved in 20 complaints with 11 violations. Unlicensed applicators were involved in 46 complaints with 34 violations. Most of these unlicensed applicators were conducting SPIs that required a licensed inspector.

Figure 3. WSDA Type of Licensee Involved in Cases with and without Violations, 2007



Agricultural Complaints

In agriculture, most complaints with violations involve pesticides applied to orchards. This is not unexpected, as orchards tend to be located in more populous areas and may be on smaller acreages intermixed with other crops, housing, and heavily traveled roads. This increases the potential for complaints about possible drift. The most frequent agricultural complaints in 2007 were from applications to orchards drifting on property or other crops. The next most frequent were complaints about drift from applications to wheat.

Non-Agricultural Complaints

In 2007, investigations due to faulty SPIs and licenses, recordkeeping or distribution were the most frequent non-agricultural complaints. Generally, complainants felt that the individual using pesticides was not properly licensed for the work being done or that they overlooked conditions conducive to further structural damage. The most frequent type of violation cited by WSDA was failure to keep accurate or adequate records (for instance, did not record conditions conducive to rot or the presence of insects) and failure to obtain the proper license type for the application.

One company was cited for operating a fraudulent rat control business. It was issued a Notice of Intent (NOI). Another case involved an allegation of health effects to a person and his dog after they walked on park lawns before the spray had dried. The applicator was issued a Notice of Correction (NOC).

Complaint distribution has been consistent over the years and points to the need for greater education of applicators, particularly for drift reduction techniques. Some violations may reflect the transient nature of employment or lack of applicator training and some, particularly for SPIs, may reflect willful fraud. Economic pressure to sell real estate may encourage inspectors to overlook possible wood-destroying organism conditions. The number of preventable violations points to the continuing need for a strong agency enforcement program. Given that the estimated number of applications is in the hundreds of thousands, the number of complaints directed to the department for serious offenses is relatively small.

Cases Involving Children

In 2007, children were involved directly or indirectly in two cases. Pesticide exposure was verified in both cases. The first case involved 21 people, some children, who reported health symptoms when a campground was fogged at night for mosquito control over a period of five days. Department of Health reported four of the individuals involved in this case as “Possible” (symptoms due to pesticide exposure). Malathion was used. The applicator was issued a NOC. The other case involved drift of kaolin, endosulfan and cyhalothrin from an application to pears. The complainant said her daughter had burning eyes. The applicator was issued a NOC.

Severity of Reported Complaints

The WSDA rates the severity of a case after complaint investigation is complete. Table 9 gives a detailed description of each rating. As in previous years, the majority of complaints were assigned a severity rating of “2” or less.

Table 9. Severity Rating of WSDA Complaint Cases, 2003 - 2007

Rating	2003	2004	2005	2006	2007	Criteria
0	22 10%	26 14.5%	29 15%	21 10%	29 16%	Problem not due to pesticides and/or no cause determined; SPI with no violations.
1	51 23%	65 32.5%	77 40%	63 30%	54 31%	Pesticides involved, no residue, no symptoms occurred; possible pesticide problem, not substantiated; issues involving records, registration, posting, notification (multiple chemical sensitivity) or licensing; Department of Health classified "unlikely" or "insufficient information."
2	112 50%	83 41.5%	54 28%	92 45%	57 32%	Residue found, no health symptoms (human, animal); health symptoms not verified; multiple minor violations; off label use; worker protection violations; PPE violations with no health symptoms; plants with temporary or superficial damage only; SPI faulty inspections; Department of Health classified "possible."
3	22 10%	18 9%	16 8%	12 6%	25 14%	Minor short-term health symptoms (rash, eye irritation, shortness of breath, dizzy, nausea, vomiting); bee kills of less than 25 hives; minor fish kills; economic plant damage under $1000; evidence of deliberate economic fraud; Department of Health classified "probable."
4	13 6%	8 4%	17 9%	14 7%	10 5%	Short-term veterinary or hospital care; bee kills of greater than 25 hives; significant fish kills; significant economic plant damage (over $1000); environmental damage; illness involving children; Department of Health classified "probable."
5	2 1%	0	0	4 2%	2 1%	Veterinary or hospital care overnight or longer; physician diagnosed children's illness as caused by pesticides; animal death due to pesticides; significant environmental damage; Department of Health classified "definite."
6	0	0	0	0	0	Human death due to pesticides.
Total	***222***	***200***	***193***	***206***	***177***	

In 2007, of the 10 cases with a severity rating of 4, seven were issued NOIs. Five were drift from applications to wheat. One was a drift to wild rye seed from an application to a right of way and one was a drift to a cherry orchard from an application to weeds. For the remaining three cases, a NOC was issued for an application that resulted in a bee kill and no action was taken on two cases. The first case involved secondary poisonings when dogs ingested mice poisoned by chlorophacinone (a rodenticide) in an orchard. No violations were noted and the dogs apparently had been allowed to run freely. Both dogs recovered. The other case was herbicide injury to grapes where no source could be determined.

The two cases with a severity rating of 5 were dog deaths and bird deaths. No action was taken in either case.

- Two eagles became ill from ingestion of small birds that had died from eating carbofuran, azoxystrobin and famphur (Insecticide and Fungicides). The eagles recovered but no source was found for the pesticides.
- Young dogs died after eating mice poisoned by chlorophacinone in an orchard. There was no evidence of misuse by the applicator. Again, the dogs had been allowed to run free.

Type of Pesticide Involved

In 2007, herbicides were involved in 82 complaints and insecticides in 51 complaints. There were relatively fewer complaints about other pesticides such as fungicides (16), fumigants (3), and rodenticides (8). This may be because there are more obvious detrimental effects from herbicide and insecticide misuse, and because herbicides and insecticides are generally applied at a higher frequency with more power equipment over larger areas.

Overall, complaints about applications in 2007 continue to show a greater variety of pesticides than seen in previous years. There were two complaints about azinphos-methyl and two complaints about endosulfan drift. These two products are labeled as “Danger/Poison.” Complaint numbers have been tracked closely because of their toxicity and their use in orchards. For the past several years there have been few complaints about these products but in 2007, WSDA received two complaints for each. The azinphos-methyl complaints were a human exposure drift complaint and a drift to property. The endosulfan drifts were also human exposure and property. NOCs were issued for the endosulfan incidents, NOIs were issued for the azinphos-methyl incidents. Complaints on both products continue to be minimal even though they increased in frequency this year. Applicators may be using more pest-specific products with a greater diversity of active ingredients and placing less reliance on broad-spectrum pest control products. This change could increase the number of single-product complaints, resulting in fewer, more general, complaints.

Herbicide drift constitutes the greatest number of complaints. Two herbicides, 2, 4-D (13 complaints) and glyphosate (18 complaints), were again the most frequently reported active ingredients in 2007 investigations (Table 10). This is consistent with previous years’ numbers and probably reflects the frequency of use, use by unlicensed (untrained) applicators and the high visibility of misuse of these products. Many complaints involved tank mixes of several products or complaints about drift from an unspecified or unknown pesticide.

Table 10. Active Ingredients Most Commonly Involved in WSDA Complaints, 2007

Active Ingredient	
2,4-D/Phenoxy	13
Glyphosate	18
Bifenthrin	6
Metsulfuron methyl	6
Dicamba	5

Complaints reported to WSDA should be regarded as indicators of potential problem areas rather than a definitive summary of all misapplications. For example, drift involving products such as sulfur and kaolin (clay) may occur more often than reported. Such products are more identifiable. People may be less worried about unknown effects from these products. These products also have minimal health effects and minimal detrimental effects on non-target plants and property.

Enforcement Actions

Complaint investigations may result in the determination that a violation of state or federal laws or rules has occurred. Generally, first offenders or minor infractions are given a NOC and a period of time to come into compliance. For more serious infractions, WSDA follows the penalty matrix for any legal actions as specified in WAC 16-228-1130.

Cases that may be taken to court are listed as NOI. The violator may pay the penalty as stated, or the violator has the right to appeal and take the case to court. The court may impose the fine and/or license suspension given by the agency or it might dismiss the case. As cases appealed may take several years to settle, all cases are listed as NOI in order to complete this report. Final settlement of these cases can be determined by contacting WSDA.

Sometimes more than one corrective action is taken on a case. In this report, only one corrective action per category is identified. For example, if more than one NOC was issued, the action would be listed as one NOC. However, if more than one type of corrective action was taken, such as a NOC and a NOI (which could happen if several applicators were involved in the same investigation), both types are listed.

The corrective actions taken in 2007 are listed in Table 11. (See Appendix D for definitions of the Enforcement Actions.)

Table 11. WSDA Agency Actions, 2003 - 2007

	2003	2004	2005	2006	2007
No action indicated	71	76	77	69	73
Verbal warning	3	1	6	5	11
Advisory letter/Warning letter	8	4	9	12	5
Notice of correction	116	98	76	93	60
Notice of intent/Administrative action	26	20	23	22	26
Referred/ Stop Sale	0	2	2	0	2
Notice of correction/Notice of intent	0	0	0	5	0
Total actions	***224***	***201***	***193***	***206***	***104***

Fines and License Suspensions Levied in 2007

In addition to license suspensions, the agency assessed $25,175 in fines during 2007. (Note: some incidents occurred prior to 2007 and not all 2007 cases have been finalized). The maximum fine was $4,800 against a company that had failed to pay a previous fine for distributing unregistered products in Washington. The minimum fine collected was $0, but the company will not be allowed to obtain a license in Washington for five years.

The average fine was $839. Five fines exceeded $1,500.

Except for the five-year denial of a license, the maximum license suspension was 49 days. For this case, the applicator drifted on several construction workers working on a nearby road. He was fined $2,000 and his license was suspended for 49 days. The five-year suspension resulted from several complaints against a pest control company operating without a license and failing to complete work that had been paid for. The company will not be allowed to become licensed in Washington for five years and must cease advertising its services. Another case, with a license suspension of 20 days and a $1,000 fine, involved damage by a commercial company to landscape plants. Most of the remaining license suspensions were for periods of two to nine days.

Other Agencies Involved

Washington State Department of Agriculture works in cooperation with other state and local agencies in collecting evidence and testimony. Cooperating agencies may independently report their involvement in these cases or they may do no further independent investigation.

In 2007, WSDA consulted with other state, federal and local agencies, including local police, in 50 investigations. The agencies most frequently consulted were Department of Health (21), Ecology (12), EPA (4), the Food and Drug Administration (3), and L&I (3). One case was referred to another enforcement body (Ecology) during 2007.

Ecology

Washington State Department of Ecology's summary of pesticide-related Spill Program complaints, Toxics Cleanup Program and Aquatic Pesticide Permits, and monitoring activities during 2007.

Background

Multiple programs within Ecology are involved in pesticide-related activities. Ecology works with National Marine Fisheries Service and other federal and state agencies to reduce the effects of pesticide applications to salmonids under the Federal Endangered Species Act. The agency participates in an interagency Urban Pesticide committee, the Washington State Healthy Schools Initiative, and other projects. Ecology is responsible for oversight of contaminated areas requiring cleanup or monitoring, including areas contaminated with pesticides. Ecology's pollution prevention and sustainability efforts emphasize prevention of the overuse and misuse of pesticides.

This report presents data for four programs: Spill Prevention, Preparedness, and Response Program; Toxics Cleanup Program; Water Quality Program; and the Environmental Assessment Program. These programs track data on pesticide spills, on the cleanup of pesticide contamination, and on the use of pesticides to protect water quality, and monitor the impacts of pesticides to water quality.

Spill Prevention, Preparedness, and Response (Spills) Program: Pesticide-Related Incidents

The Spills Program responds to pesticide-related complaints. It is responsible for ensuring that damage from a spill is contained as much as possible and cleaned up as quickly as possible. Ecology uses the data from pesticide-related spills and complaints to identify where additional education is necessary to reduce the effects of pesticides on human health and the environment. Summaries of the Spills Program pesticide-related complaints for 2007 are provided in Appendix C.

Table 12 lists the types of pesticide-related complaints received from 2003 to 2007. Complaints can involve more than one category of concern.

Table 12. Ecology Pesticide-Related Complaints, 2003 – 2007

Type of complaint*	2003	2004	2005	2006	2007
Pesticides threatening ground or surface water	13	10	23	10	8
Pesticide disposal or waste concern	12	6	2	9	6
Spills and fires	5	10	12	5	9
Unsafe pesticide storage or handling	10	3	5	10	3
Totals	40	29	42	34	26

**Complaints may involve more than one category.*

There were 14 pesticide-related complaints involving threats to air, water, and/or soil in 2007. Spills Program response to complaints may include follow-up by phone, referral back to involved parties for voluntary cleanup, referral to another agency, or issuance of a notice or requirement for cleanup. Investigations are initiated for complaints requiring field work, research, coordination with other agencies, or technical assistance.

In 2007, Ecology responded within 24 hours to all of the 14 complaints that were a threat to air, water, or soil.

Of the 14 pesticide-related complaints received by Ecology during 2007:

- Three occurred in the agricultural environment.
- Six involved commercial or industrial activities.
- Seven were reported by private citizens.
- Two stemmed from residential activities.
- One involved a combination of chemicals containing a pesticide.
- Thirteen resulted in potential exposure to humans.
- Seven required some form of cleanup or removal of materials.
- None was referred to the Toxics Cleanup Program.

After Ecology Spills Program responds to and stabilizes the initial emergency, the case is closed if it is determined there are no long-term effects. If there are long-term effects, the case is referred to another program within the agency. When indicated, Ecology refers complaints to other state or local agencies. In 2007, the Spill Program referred 10 complaints involving pesticides to tribes, Washington State Department of Transportation, EPA, city and county public works departments, and WSDA. Ecology immediately notified the Department of Health of one incident where humans were potentially exposed to pesticides.

State law allows a penalty up to $10,000 per day of violation (per day of discharge) for spills that affect waters of the state. There were no pesticide-related fines issued in 2007, as none of the spills affected state waters.

Toxics Cleanup Program: Contaminated Sites Containing Pesticides

Ecology is responsible for oversight of contaminated areas requiring cleanup or monitoring. These sites may have been contaminated from leaking underground petroleum tanks, historic or current pesticide use, spills, or industrial processes. When a contaminated site is added to Ecology's cleanup list, it remains on the list until it is either cleaned up or requires no further action. A site may be on the list for more than one year. Maps of pesticide-contaminated sites may be found in Appendix E.

Ecology added 21 pesticide-contaminated sites to the cleanup list in 2007. Twelve sites were soil contamination at the Department of Energy's Hanford site in Benton County. These 12 sites were added because pesticides were detected

on site. These detections were a result of historic pesticide use including pre-Hanford land use. Of the other nine sites added in 2007, two sites were added in Yakima County and one each in Benton (unrelated to Hanford), Douglas, King, Klickitat, Pierce, Skagit, and Thurston counties.

Ecology designated the 12 Department of Energy Hanford sites as active and undergoing cleanup. Of the other nine pesticide-contaminated sites identified in 2007, Ecology designated three sites as active and undergoing cleanup, five as awaiting cleanup, and one as a non-active (remediated) site that was cleaned up or required no further action.

There were a total of 234 pesticide-contaminated sites in 2007. Of those, 64 sites remained active in the cleanup process (awaiting cleanup) at year's end. The status for all sites for 2007 is summarized in Table 13.

Table 13. Status of Pesticide-Contaminated Sites Statewide, 2007

Pesticide-contaminated sites	2007
Sites undergoing cleanup at year's end	89
Sites with no further action needed	81
Sites awaiting further investigation	64
Total pesticide-contaminated sites for the year	***234***

Water Quality Program: Aquatic Pesticide Permits

Ecology is delegated by the EPA to implement all federal water pollution control laws and regulations through the state's laws. These include the issuance of permits for the use of aquatic pesticides to protect water quality. The permitting process ensures that chemicals are applied sparingly and properly, thereby reducing the potential for exposure to natural resources and people. State law allows a penalty up to $10,000 per day of violation (per day of discharge) for pollution effects to waters of the state. The data below include Ecology's pesticide use data in or near aquatic ecosystems and penalties issued due to effects to waters of the state.

Aquatic Plant and Algae Management National Pollutant Discharge Elimination System (NPDES) Permit

Table 14 contains the pesticide use reporting information for pesticides **applied in lakes and ponds under Ecology's Aquatic Plant permit in 2007.**

Table 14. Aquatic Plant and Algae Management Permit, 2007

Product	Pounds of active ingredient used
2, 4-D	190
Diquat	3,046
Endothall	1,498
Fluridone	446
Glyphosate	350
Sodium carbonate peroxyhydrate	331
Triclopyr	3
Total pounds of active ingredient applied	***5,863***

Oyster Grower's NPDES Permit

The Oyster Grower's NPDES Permit is an individual permit issued directly to the Willapa Bay/Grays Harbor Oyster Growers Association. It allows the use of carbaryl, an insecticide in the carbamate family, to control burrowing shrimp in oyster beds. The data for 2005 through 2007 are shown in Table 15.

In 2007, WSDA issued an experimental use permit for use of Imidacloprid. Imidacloprid is a neonicotinoid, which is a class of neuro-active insecticides modeled after nicotine. Imidacloprid was applied experimentally to less than one acre and did not exceed 0.5 pounds of active ingredient.

Table 15. Oyster Growers Permit, Carbaryl Usage, 2005 - 2007

Year	Acres treated	Pounds of active ingredient used
2005	576	3,629
2006	593	4,741
2007	555	4,438

Noxious Weed NPDES Permit

The Noxious Weed NPDES Permit is issued to government agencies, homeowners, lake-advocacy groups, and marinas to treat fresh and saltwater environments for noxious, non-native plant species. The treated areas are located throughout Washington State. The product totals are listed in Table 16.

Table 16. Noxious Weed NPDES Permit, 2007

Product	Pounds of active ingredient used
2, 4-D	106
Diquat	47
Endothall	56
Fluridone	1
Glyphosate	35,301
Imazapyr	3,634
Triclopyr	698
Total pounds of active ingredient applied	***39,843***

Fish Management NPDES Permit

The Fish Management NPDES Permit is issued to the Department of Fish and Wildlife to apply rotenone for fish management in Washington lakes. In 2007, eight lakes were treated in three counties under this permit (Table 17).

Table 17. Fish Management NPDES Permit, 2007

Water Body	Pounds of active ingredient used
Chopaka Lake	786
Corral Lake	336
Blythe Lake	74
Chukar Lake	5
Scaup Lake	1
Dixon Pond/Negro Creek	28
Sprague Lake	5,191
Cow Creek	3
Cow/Hallin/Finnell/Sheep lakes	357
Finnell Lake	8
Total pounds of active ingredient applied	***6,789***

Irrigation District NPDES Permit

The Irrigation District NPDES Permit is issued for products to control weeds and algae in irrigation systems. The permit was issued to 16 of the 97 Washington irrigation districts during the 2007 application season. The 16 districts include 81 percent of the total irrigated land in Washington. The amounts of active ingredients applied in irrigation systems are listed in Table 18.

Table 18. Irrigation District NPDES Permit, 2007

Product	Pounds of active ingredient used
Acrolein	197,550
Copper products	153,588
Chelated Copper	2,280
Green Clean	110
Xylene	67,811
Total lbs. of active ingredient applied	***421,340***

During the 2007 season, Kennewick Irrigation District violated the Irrigation System Aquatic Weed Control National Pollutant Discharge Elimination System Waste Discharge General Permit No. WAG991002 by exceeding the discharge permit limit for acrolein and copper. Ecology issued the district a civil penalty in the amount of $4,000. The district has submitted an application for relief from penalty as allowed in RCW 43.21B.300 (1). Ecology has not issued a decision on the application for relief from penalty. Ecology also issued an administrative order to the Kennewick Irrigation District requiring it to submit a pesticide application plan that would address the violations.

Mosquito General NPDES Permit

To prepare for the arrival of West Nile virus (WNV), the number of groups treating for mosquitoes in Washington State rapidly increased. Ecology allows mosquito control districts and government agencies to apply for coverage under a general permit through the Department of Health. Table 19 summarizes pesticide totals statewide from the 2007 application season.

Table 19. Mosquito General NPDES Permit, 2007

Product type	Pounds of active ingredient used
Bacillus spaericus (H-5a5b)	481
Bacillus thuringiensis israelensis (Bti)	35,963
Methoprene (all formulations)	1,379
Monomolecular film	40
Paraffinic white mineral oil	18,741
Total lbs. of active ingredient applied	***56,605***

Surface Water Monitoring

Surface Water Monitoring Program for Pesticides in Salmonid-Bearing Streams

Ecology and WSDA have a cooperative agreement for an ongoing study to investigate pesticide occurrence in salmonid-bearing streams. The complete report, Surface Water Monitoring Program for Pesticides in Salmonid-Bearing Streams, 2007 Monitoring Data Summary, is available online at: http://www.ecy.wa.gov/pubs/0803020.pdf.

Pesticide concentrations were measured in an urban drainage represented by Thornton Creek in the Cedar-Sammamish watershed, and in agricultural drainages represented by the Lower Yakima and Wenatchee-Entiat watersheds in Eastern Washington, and the Lower Skagit-Samish watershed in Western Washington. A three-year study cycle began in 2007 to investigate pesticide occurrence in the Wenatchee-Entiat watershed. It was the second year for the Skagit-Samish watershed. It was the fifth in a six-year cycle to study pesticides in the Cedar-Sammamish and Lower Yakima watersheds.

Weekly sampling of 14 to 16 sites occurred February through September 2007 for 152 pesticides and degradates. A total of 58 current use pesticides, historical pesticides, and/or degradate compounds were detected in the urban and agricultural drainages. When pesticides were detected, the most commonly found general pesticide category for both the urban and agricultural basins was herbicides. A triennial report detailing results for all areas will be available in 2009.

Other Pesticide Related Water Quality Studies

- Copper is used as an herbicide in irrigation canals. In November 2007, Ecology began a sampling project to assess the effects of copper on receiving water in the Wenatchee and mid-Columbia basins. Sediment and water column sampling will be conducted during the irrigation season. This project will continue into 2008 and a final report will be available in 2009. The Quality Assurance Project Plan can be found at: www.ecy.wa.gov/biblio/0703112.html.
- A data report and comparison to human health criteria were completed in 2007 for chlorinated pesticides, PCBs, and dioxins in Yakima River fish. This report summarizes data on the primary contaminants of concern in fish fillets and compares the results to federal Clean Water Act 303(d) human health criteria for fish consumption. The report contains the complete chemical and biological data from the survey, and includes historical data on chemical contaminants in Yakima River fish. This report can be found at: http://www.ecy.wa.gov/biblio/0703036.html.

Health

Washington State Department of Health's summary of pesticide-related investigations during 2007.

Background

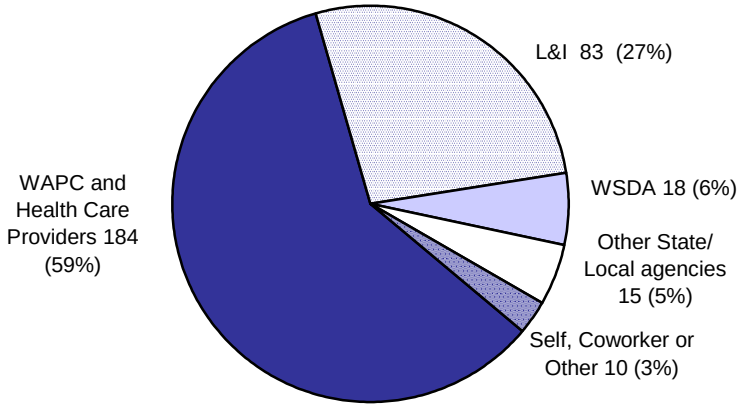
The Department of Health Pesticide Program investigates reports of illnesses related to pesticide exposure. Department of Health uses data collected from these investigations to identify public health problems and to develop strategies to prevent human exposure to pesticides. Federal and other state agencies, local government, advocacy groups, and legislators also use the data for similar purposes.

This Department of Health report on 2007 pesticide-related data describes sources of case reports, classification and severity of investigated cases, and the number and location of Department of Health investigations. The Department of Health presents data on occupational, agricultural, and non-agricultural cases here. Conclusions and recommendations can be found at the end of this section.

Sources of Case Reports

The Department of Health receives reports of suspected pesticide illness events from numerous sources, including WAPC, L&I Claims Administration Program, WSDA, health care providers, and others. More than one agency may report the same illness event. An event may involve exposure to one or more individuals. Each individual exposure is investigated by Pesticide Program staff members as a separate case. Figure 4 shows the number of individual cases investigated, and the proportion of report sources based on the first report received by Department of Health per case.

Figure 4. Source of First Report:* Investigated Cases of 2007



n = 310 cases investigated

* Some cases were reported by more than one source. This represents only the source of first report to the Department of Health.

Electronic reporting from the Washington Poison Control (WAPC) provided approximately 58 percent of the total reports, more than any other source. The WAPC reports include the bulk of health care provider reporting since providers are instructed by the Department of Health to report suspected pesticide cases through the WAPC. In 2007, the Department of Health also received three (1 percent) first reports directly from health care providers. Electronic reporting from L&I Worker's Compensation claims unit was the second largest source, providing 104 total reports and 83 (27 percent) of first reports.

Case Investigation Criteria

Department of Health receives report information from more than one source. Any single event may involve multiple people who experience pesticide illness. Department of Health reviews all referred reports and investigates those that meet the following criteria:

- A pesticide exposure is reported.
- Symptoms are reported.
- At least one individual involved saw a health care provider.
- The pesticide exposure occurred during the last three months.
- The pesticide exposure occurred in Washington State.
- The pesticide exposure was not a suicide attempt.

Department of Health occasionally investigates cases of special circumstance even if all criteria are not met. Examples are: unusual exposures to children,

incidents involving multiple ill people, moderate to severe illness or injuries for which the individual did not seek health care, and cases referred by another state agency for co-investigation with Department of Health. Although many disinfectants are regulated as pesticides under federal law, the department does not investigate disinfectant-related injury unless the product is specifically being used as a fungicide (e.g., sprayed on mold).

Classification of Investigated Cases

Department of Health Pesticide Program investigators interview individuals, obtain pesticide application and medical records, and, at times, conduct field visits. Investigators use these data to determine the likelihood that reported symptoms are related to a pesticide exposure. Investigators classify cases using documentation of exposure and health effects, and evaluation of the causal relationship. Department of Health uses the National Institute for Occupational Safety and Health (NIOSH) Case Classification System to distinguish between Definite, Probable, Possible, Suspicious, Insufficient Information, and Unlikely cases (Appendix B). Minimum criteria for assignment to DPP classifications include: symptoms are characteristic of known toxicological effects of the pesticide, and the time between exposure and symptom onset is consistent. Further description of DPP cases is provided in Table 20.

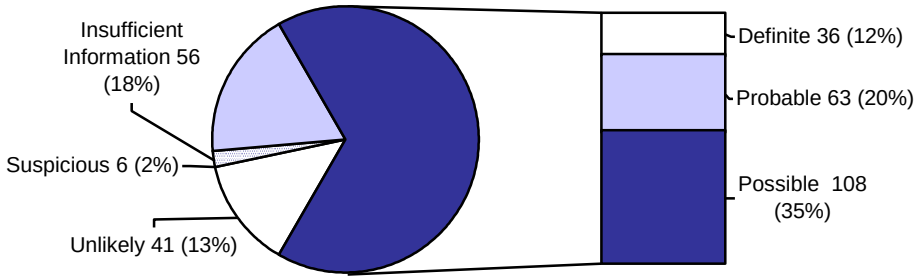
Table 20. Classification Criteria of Definite, Probable, and Possible Cases

	Evidence of Exposure	Evidence of Health Effects
Definite	Laboratory, clinical, or environmental evidence corroborates exposure, and →	Two or more post-exposure health effects (one a sign*) or lab findings are reported by a licensed health care provider.
Probable	Laboratory, clinical, or environmental evidence corroborates exposure, and →	Two or more post-exposure symptoms** are reported by the individual or a health care provider.
	Evidence of exposure is based on report from case, witness, application, observation of residue or contamination, and →	Two or more post-exposure health effects (one a sign) or lab findings are reported by a licensed health care provider.
Possible	Evidence of exposure is based on reports from case, witness, application, observation of residue or contamination, and →	Two or more post-exposure symptoms** are reported by the individual or a health care provider.

**Signs are considered objective evidence of illness and are observable on examination by a health care provider (e.g. low heart rate, cough, rash, depressed cholinesterase activity).*
***Symptoms are considered subjective evidence of illness and may not be observable on examination by a health care provider (e.g. headache, nausea, dizziness).*

In 2007, investigators classified 207 (67 percent) of the 310 cases as DPP related to pesticide exposure. Figure 5 shows the classification of cases for 2007.

Figure 5. Classification of Investigated Cases by Number and Percentage, 2007

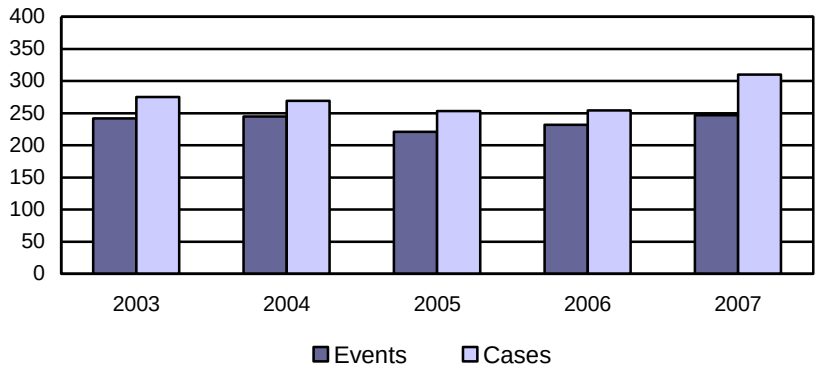


n = 310 cases

Number of Investigations

During 2007, 247 events involving 310 cases (people) met the Department of Health case criteria and were investigated as suspected pesticide illnesses. Figure 6 shows the relative stability in the number of cases that annually meet Department of Health investigation criteria.

Figure 6. DOH Events and Cases Investigated, 2003 – 2007



Number of DPP Cases

After investigation, cases were classified as to the likelihood that pesticide exposure contributed to the reported symptoms. In 2007, there were 181 events that involved 207 DPP cases. Of the 181 DPP events, 167 (92 percent) involved one individual, seven (4 percent) involved two individuals, four (2 percent) involved three individuals, and two (2 percent) involved four individuals. One drift event involved six individuals.

Numbers of DPP cases for the years 2003 through 2007 are shown in Table 21.

Table 21. DPP Case Classification, 2003 – 2007

Classification	2003	2004	2005	2006	2007
Definite	69	63	49	21	36
Probable	53	55	48	39	63
Possible	62	86	91	89	108
Total DPP Cases	***184***	***204***	***188***	***149***	***207***
All Cases Reported	275	269	252	254	310
Percent DPP	67%	76%	75%	58%	67%
Percent Insufficient Information	17%	14%	17%	22%	18%

The number of DPP cases has remained fairly steady, between 180 and 220 cases per year, since 2003. The exception was 2006 when an increase in cases classified “insufficient information” coincided with a loss of two full-time investigators during the 2006 investigation season. In 2007, the program was fully staffed. Full staffing allows investigators to spend more time to locate difficult to reach individuals and employers, and to obtain sufficient information for more definitive classifications.

The other classification that contributed to non-DPP cases in 2007 was “unlikely related to pesticide exposure.” In 2007, 13 percent of investigated cases were classified as “unlikely,” which is higher than the average (7 percent) for the previous five years. Most of this increase is attributed to a single case investigation (Department of Health case number 070167) with 21 people involved. This case involved a group of families camped at a resort that reported illness after grounds were sprayed for mosquitoes. Thirteen of the 21 individuals in this case were classified as unlikely because their symptoms were not consistent with low level malathion exposure and/or were not consistent with the timing of the exposure.

Underreporting

The number of DPP cases documented by the Department of Health is an underestimate of the actual number of pesticide-related illness and injuries that occur in Washington each year. The Department of Health surveillance system primarily captures cases that seek medical care and for which the health care provider either calls WAPC and/or files an L&I industrial insurance claim.

Many people with mild symptoms do not seek health care. The WAPC data provides a limited measure of this. In 2007, there were an additional 468 people with mostly mild symptoms that were reported to WAPC but did not seek health care and thus failed to meet Department of Health criteria for investigation. Medical outcome of these 468 cases was mostly coded by WAPC staff as "minor effect" (70 cases) or "not followed, minimal clinical effects possible" (378 cases).

The 468 cases do not include cases that WAPC staff codes as likely "unrelated to the exposure." Occupational cases in the Department of Health data set may be similarly underrepresented. Workplace exposures are generally reported through L&I, not WAPC. During focus groups with farm workers in the Yakima area in 2001, workers said they would not likely take time off from work to seek health care for mild to moderate symptoms. They are also unlikely to self-report to a government agency, voicing concerns about possible detriments to their job security[9].

In addition, there is underreporting from health care providers.

- Providers may not recognize the symptoms as being pesticide-related.
- Providers may not know to report.
- Providers may decide other clinical responsibilities take precedent.
- The patient's employer may be self-insured so claims would not be submitted to L&I.

Currently there is no good estimate of the extent of health care provider underreporting in Washington. In a 2000 Department of Health study[10], Department of Health pesticide illness surveillance captured about 60 percent of occupational illnesses that sought medical care in the Yakima area and were given a pesticide-specific diagnosis. Farming employers are primarily insured through L&I, so the percentage of capture of health care visits due to occupational pesticide-related injuries may be relatively higher in this region. No state studies have been done to estimate the number of health care visits for urban residential pesticide exposures that go unreported.

Passive surveillance programs never capture every case. Their strength is in capturing enough cases to understand what problems are occurring and why. The focus of the Department of Health pesticide illness monitoring is to collect data for targeted prevention. Although it is possible that Department of Health surveillance is missing significant cases, the program is documenting enough problem areas to be able to conduct prevention activities.

Severity of Medical Outcome

The Department of Health uses the NIOSH Severity Index for classifying signs and symptoms associated with pesticide cases (Appendix B). The "mild" category includes symptoms such as nausea, vomiting, shortness of breath, headache, dizziness, and skin or eye irritation. With mild severity cases, duration is relatively short: three days or less of time lost from work or normal activities.

[9] See "Improving Data Quality in Pesticide Illness Surveillance" June 17, 2004, at http://www.doh.wa.gov/ehp/oehas/publications_pdf/improving_data_quality_in_pesticide_illness_surveillance-2004.pdf

[10] Same as above.

“Moderate” illness or injury includes signs and symptoms that are pronounced and/or prolonged, and in most cases must be observed by a health care provider. These include second- and third-degree skin burns, ocular burns, systemic symptoms such as altered heart rate, slurred speech, and asthma attack. For moderate cases, the time lost from work or normal activities is usually three to five days.

Cases are classified as “severe” when the illness or injury is considered life threatening; these cases typically require treatment or hospitalization to prevent death. Signs and symptoms include, but are not limited to: coma, cardiac arrest, renal failure, and/or respiratory depression. The individual often sustains substantial loss of time (more than five days) from regular work.

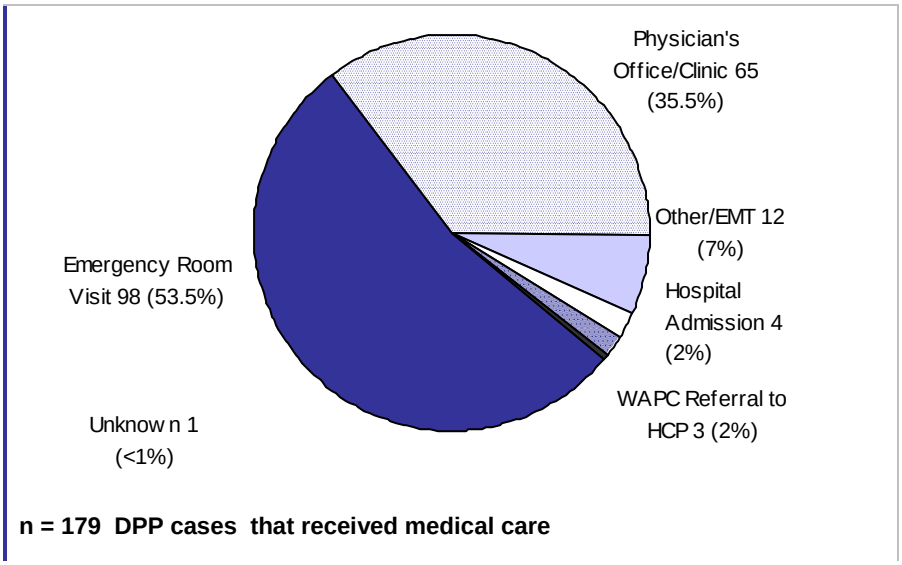
“Death” classification indicates a fatality attributed to pesticide exposure. These are infrequently reported in the Department of Health data set as Department of Health surveillance excludes intentional pesticide exposures (i.e., suicide).

Table 22 lists severity of medical outcomes for DPP cases from 2005 through 2007. Figure 7 shows the type of medical care sought for 2077 DPP cases. In 2007, 181 (87 percent) of the 207 DPP Department of Health cases were classified as mild. Twenty-six (13 percent) cases were classified as moderate. There were no DPP cases with higher severity in 2007. There was, however, one death classified by the Department of Health as insufficient information. The fatality occurred in a 70-year-old male who accidentally drank an herbicide provided by a friend in an unmarked pop bottle. He was admitted to the hospital with severe abdominal pain and nausea. Despite medical intervention, his symptoms progressed over the next three days, and he died on the fourth day. He understood the product to be concentrated Roundup with blue dye. Although blue dye was observed in patient emesis, later analysis of the patient’s hospital blood, in storage at the state toxicology laboratory, was negative for glyphosate, the active ingredient in Roundup. There was not enough blood to screen for other possible herbicides and the pop bottle was destroyed before the Department of Health could analyze the contents. Under Department of Health case classification criteria, the chemical class of the pesticide must be known before it can be determined whether reported symptoms match the known toxicology of the product. Because the chemical class of the product could not be identified, the Department of Health classified the case as insufficient information. In contrast, WAPC classified the case based on the suspected product at the time of death. This case was recorded as a death due to glyphosate in the WAPC data set.

Table 22. Severity of Medical Outcome, 2005 - 2007

Severity	2005	2006	2007
Low/Mild	161 (86%)	126 (85%)	181 (87%)
Moderate	26 (14%)	20 (13%)	26 (13%)
Severe	1 (0.5%)	2 (1%)	0 (0%)
Death	0 (0%)	1	0 (0%)
Total DPP Cases	***188***	***149***	***207***

Figure 7. Type of Medical Care Sought, 2007 DPP Cases



Of the 207 DPP cases in 2007, 179 (86 percent) received medical care for their symptoms (Figure 7). The majority of these were seen in the emergency room or in a physician's office or clinic. Three were referred to health care providers by WAPC, but did not obtain care. In each of these instances there was enough information about the exposure and symptoms to warrant investigations. There was one case in 2007 where the type of medical care received was unknown.

There were 24 DPP cases in which no medical care was sought. The Department of Health investigated these cases because they were involved in events in which multiple people became ill or had significant symptoms, or were referred by another agency.

The proportion of mildly to moderately ill people who sought health care in the Department of Health data set is skewed by the fact that Department of Health surveillance criteria selects for cases that did seek health care. In fact, the larger data set from the WAPC clearly shows that most people with mild symptoms do not seek health care.

Location of Investigated Cases

The Department of Health tracks location of incidents in order to target prevention activities geographically. In 2007, 30 of the 39 counties in Washington had cases that were classified as DPP related to pesticide exposure. For one DPP case, the county was unknown. Table 23 lists the 10 counties with the most reported cases. Of the 207 DPP cases, 142 (68.6 percent) came from these 10 counties. Seventy-two percent of the state's 6.5 million people reside in these 10 counties. Table 24 lists the 10 counties with the most reported cases adjusted for the population of those counties.

Table 23. Top Ten Counties with the Most Reported DPP Cases, 2007

County	Agricultural	Non-Agricultural	DPP Cases	DPP Cases per 100,000 Population	Population*
King	0	33	33	1.77	1,861,300
Yakima	14	7	21	8.97	234,200
Grant	7	7	14	16.97	82,500
Pierce	0	13	13	1.64	790,500
Okanogan	10	3	13	32.66	39,800
Spokane	1	11	12	2.66	451,200
Kitsap	0	11	11	4.49	244,800
Snohomish	0	9	9	1.31	686,300
Franklin	2	6	8	11.87	67,400
Thurston	2	6	8	3.36	238,000

** Population estimates are from Office of Financial Management, Forecasting Division, http://www.ofm.wa.gov/pop/april1/finalpop2008.xl*

King and Yakima counties have the most reported DPP cases. However, when the county population is considered, King falls out of the top 10 counties with DPP cases because it is more heavily populated.

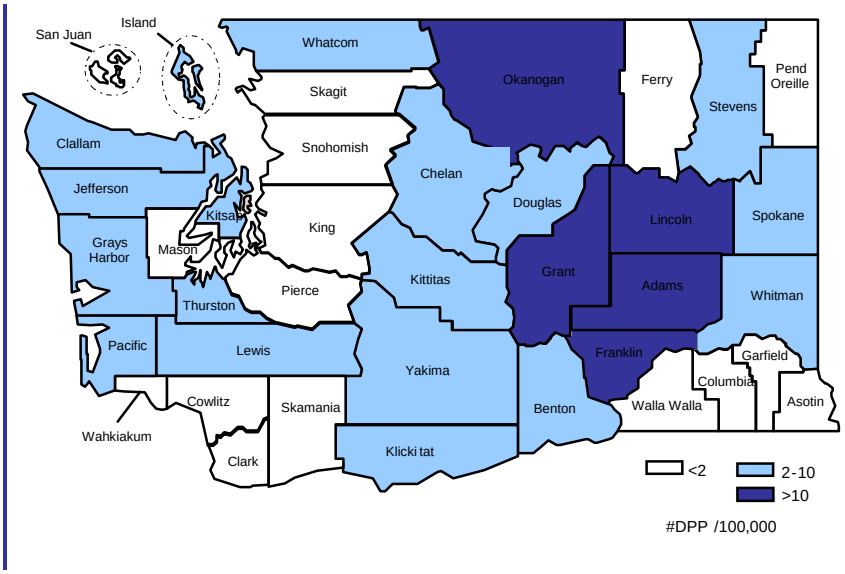
Rural counties with smaller populations appear to have the most DPP cases adjusted for population. When using both methods, Franklin, Grant, Okanogan, and Yakima counties remain in the top 10.

Table 24. Top Ten Counties with the Most DPP Cases per 100,000 Population, 2007

County	DPP Cases per 100,000 Population	DPP Cases	Population
Lincoln	58.25	6	10,300
Okanogan	32.66	13	39,800
Adams	17.05	3	17,600
Grant	16.97	14	82,500
Franklin	11.87	8	67,400
Pacific	9.26	2	21,600
Yakima	8.97	21	234,200
Douglas	8.26	3	36,300
Kittitas	7.83	3	38,300
Clallam	7.30	5	68,500

Figure 8 shows the location of DPP cases adjusted for population for 2007. Of the 207 DPP cases, 105 occurred in Western Washington, and 101 occurred in Eastern Washington. For one case, the county was unknown.

Figure 8. Number of DPP Cases per 100,000 Population, 2007



Agricultural vs. Non-Agricultural Cases

Table 25 displays the distribution of cases defined as DPP by agricultural and non-agricultural setting from 2003 through 2007.

Table 25. Annual Agricultural and Non-Agricultural DPP Cases, 2003 – 2007

Year	Agricultural	Non-Agricultural	Total Cases
2003	73 (40%)	111 (60%)	184
2004	64 (31%)	140 (69%)	204
2005	77 (41%)	111 (59%)	188
2006	44 (30%)	105 (70%)	149
2007	60 (29%)	147 (71%)	207

Since 2003, there appears to be a slight increase in reported non-agricultural cases and a slight decrease in reported agricultural cases.

Agricultural cases occur when the pesticide application is intended for agricultural commodities such as fruit and field crops, nursery, livestock, and forest operations. Agricultural cases include exposure during pesticide handling, contact with drift or foliar residues from an agricultural application, and spills at agricultural storage facilities. Typical non-agricultural cases involve commercial and residential use of pesticides. They include spills or splashes while opening and pouring pesticides, or wind blowing spray during the application.

Seasonality

Tracking the peak months of incidents helps time prevention education, assists in outreach to health care providers on recognition and management of pesticide illness, and helps other organizations to know when to time their activities (i.e., employee training, environmental sampling in streams for pesticide runoff).

In 2007, 86 (42 percent) of all DPP cases occurred in April through June, and 72 (35 percent) occurred in July through September. Table 26 shows 2007 agricultural and non-agricultural DPP cases by season.

Table 26. DPP Cases by Season of the Year, 2007

	Agricultural	Non-Agricultural	Total Cases
January - March	8	19 *	27
April - June	33	53	86
July - September	16	56 *	72
October - December	3	19 **	22
Total	***60***	***147***	***207***

** Includes one case where agricultural/ non-agricultural classification is unknown.*
***Includes two cases with exposures occurring in 2006 and investigation completed in 2007.*

Age and Gender

There were 31 DPP cases involving children younger than 18 years. A summary of these cases can be found in Appendix C. Nineteen of the children were under the age of 6, six were between ages 6 and 11, and six were between 12 and 18 years of age. Below are case examples.

- Twelve exposures occurred when the product was in reach of young children.
- Nine resulted from contact to product residues (six from indoor surfaces or residues on pets, and three from outdoor residues).
- Six occurred during use of the product.
- Three resulted from accidents (spilling product, mistaking product for contact lens solution, or drinking product from a pop can).
- One was exposed when an applicator operator fogged a campground for mosquitoes.

Table 27 lists the age and gender of 2007 DPP occupational and non-occupational cases. In 2007, more males (68) reported occupational exposures than females (20). More females (71) reported non-occupational exposures than males (48).

Table 27. Occupational and Non-Occupational DPP Cases by Age and Gender, 2007

	Occupational		Non-Occupational		
Age	**Female**	**Male**	**Female**	**Male**	**Total**
0-5	0	0	13	6	19
6-11	0	0	3	3	6
12-17	0	2	2	5	6
18-29	4	21	13	4	45
30-49	13	33	15	9	70
50+	2	11	25	21	59
Unknown	1	1	0	0	2
Total	***20***	***68***	***71***	***48***	***207***

Occupational Cases of Pesticide-Related Illness

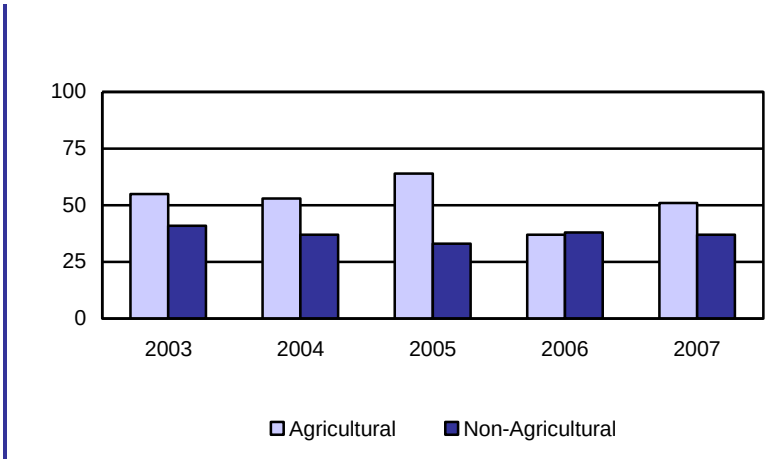
In 2007, 88 DPP cases involved a pesticide exposure on the job (Figure 9). This represents 43 percent of DPP cases reported, which is similar to the last three years. In 2004 there were 90 occupational cases (44 percent of DPP), 98 in 2005 (52 percent of DPP), and 75 in 2006 (50 percent of DPP).

Fifty-one of the 88 DPP cases involved agricultural pesticides. Forty-four cases were doing agricultural work. Seven were exposed to agricultural pesticides while doing non-agricultural work, including one incident of agricultural drift to six construction workers.

Thirty-seven workers were exposed to non-agricultural pesticides. Their occupations included: landscapers and residential yard services, custodial or building maintenance staff, and various other workers who came in contact with a treated building or landscape.

The number of agricultural workers involved in DPP cases has remained fairly steady since 2003. These numbers are down from the late 1990s when a typical year would include 70 to 90 agricultural workers with occupational pesticide-related illnesses. This drop may be due to prevention efforts by employers, state- and university-sponsored worker safety training, and state and federal enforcement activities. The dip seen in 2006 may be a result of Pesticide Program understaffing during 2006, described previously.

Figure 9. Agricultural and Non-Agricultural Occupational DPP Cases, 2003 – 2007



Agricultural Pesticide Events

Table 28 shows the number of drift events and cases (people) associated with agricultural applications for 2003 through 2007. The annual number of drift cases tends to vary as a single event can affect multiple people. The number of events has remained fairly steady in the past five years. Drift to workers generally involves agricultural workers. Drift to non-workers generally involves people in their homes, driving on roads, or in parks.

Table 28. DPP Cases of Agricultural Drift to Workers and Others, 2003 – 2007

Year	Occupational	Non-Occupational	DPP Cases	Events
2003	12	12	24	16
2004	5	11	16	13
2005	20	10	30	13
2006	9	7	16	12
2007	12	9	21	13
Total	***58***	***49***	***107***	***67***

In 2007, there were 60 DPP pesticide-related illness involving agricultural operations. These exposures occurred when the pesticide application was intended for agricultural commodities such as fruit and field crops, nursery, livestock, and forest operations. Department of Health classified these as definite (11), probable (26), and possible (23). In 2007, there were more drift exposures than any other single type of exposure (Table 29), although direct spray during application was the largest source of exposure for occupational cases, with 20 (33 percent) of the DPP exposures resulting from direct spray/dust.

Table 29. Agricultural Occupational and Non-Occupational DPP Cases by Source, 2007

Source of Pesticide Exposure	Occupational	Non-Occupational	Total
Drift	12	9	21
Direct spray/dust during application*	20	0	20
Leak/Spill	5	0	5
Other	2	0	2
Unknown	7	0	7
Indoor Air	1	0	1
Surface/foliar residues	4	0	4
Total Cases	***51***	***9***	***60***

**Can be direct exposure to the handler or overspray to a bystander. Includes exposure to fumes while mixing or loading.*

Pesticides Involved in DPP Cases with Agricultural Exposures

Twenty-seven of the 60 agricultural cases were handling pesticides at the time of their exposure. Handling is defined as applying, mixing/loading, transporting pesticides, or maintaining pesticide equipment. Seventeen workers were exposed to pesticide drift or residues on leaves while thinning, pruning, handling nursery plants, or doing other agricultural work. Another 16 cases involved agricultural drift to bystanders or workers engaged in non-agricultural work.

As in prior years, insecticides continue to be the most problematic class of pesticide in reported agricultural cases. Twenty-seven (45 percent) of the 60 DPP cases involved exposure to insecticides, which were either alone or in combination with other pesticides. Cholinesterase inhibiting insecticides comprised more than half (56 percent) of these insecticide cases.

Fungicides were involved in 18 of the 60 cases. In nearly half of these, the fungicide was tank-mixed with insecticides so the illness can not be positively attributed to the fungicide alone. This reflects the common practice of tank-mixing insecticides and fungicides in tree fruit applications. Herbicides were involved in 20 of the 60 cases.

Table 30 shows the pesticide active ingredients for DPP cases involving agriculture pesticides. The number of cases involved with a specific chemical is often higher than indicated in the table. This is because exposures involving a tank mix of more than one product were tallied in the table as combinations.

Table 30. DPP Agricultural Cases by Pesticide Ingredient*, 2007

Pesticide	Ag Handlers	Other Ag Workers	Bystanders, Including Non-Ag Workers
Cholinesterase Inhibitors			
Azinphos-Methyl	2		1
Ethoprop	1		
Carbaryl	1		
Phosmet		2	
Combination of cholinesterase inhibitors with other pesticides	5	2	1
Other insecticides			
Endosulfan		1	
Lambda-cyhalothrin		1	
Spirodiclofen		1	
Combinations of insecticides and other pesticides (no cholinesterase inhibitors)	2	2	5
Herbicides			
Dicamba	1		
Glyphosate (mostly as Roundup)	1		1
Metsulfuron-methyl			1
Paraquat dichloride	3		
Herbicide combinations	5	1	7
Fungicides			
Bacillus pumilus strain QST 28	1		
Calcium polysulfide (lime sulfur)	1		
Fenarimol		1	
Hydrogen peroxide	1	1	
Sulfur		1	
Combinations of fungicides	3	2	
Other			
Prohexadione calcium (IGR)		1	
Aluminum phosphide		1	
Totals	***27***	***17***	***16***

*Tank mixes that include insecticides and fungicides are tallied in the insecticide categories under "combinations." The total number of cases involving exposure to a fungicide is actually 18.

Cholinesterase-Inhibiting Insecticides

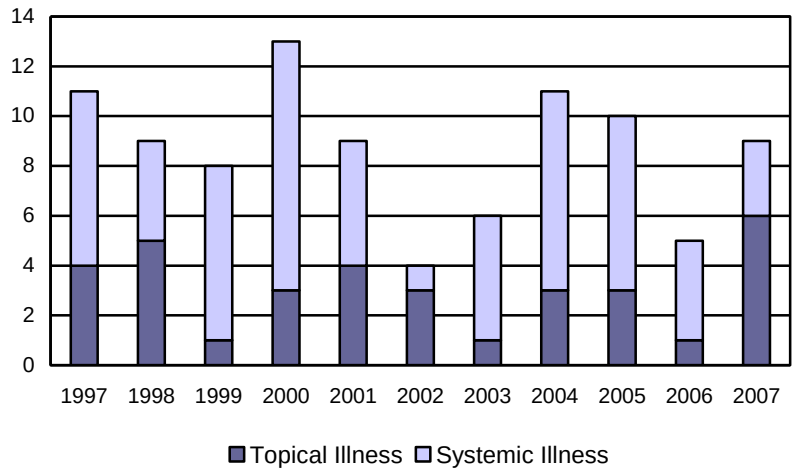
With the statewide implementation of cholinesterase monitoring by L&I in 2004, there is continued interest in data specific to cholinesterase inhibiting insecticides. In 2007, the cholinesterase monitoring program moved from the

Department of Health state lab to a private laboratory and the results were reported directly to L&I. A full description of the cholinesterase monitoring data is available in the L&I section of the PIRT report.

In 2007, the Department of Health documented nine DPP cases in pesticide handlers associated with cholinesterase inhibitors. The department has seen an average of about 10 cases annually among handlers for the past 10 years. Overall, cholinesterase inhibitors were associated with about one-third of DPP handler pesticide cases in 2004 and 2005.

Figure 10 shows the number of handlers who experienced systemic symptoms (which affects the body internally) and the number who had topical symptoms (i.e., skin or eye irritation) from 1997 to 2007. Since the cholinesterase monitoring program was implemented in 2004, there is a decrease in systemic poisoning cases documented by the Department of Health.

Figure 10. Type of Illness and Injury for Handlers of Cholinesterase-Inhibiting Pesticides,* 1997 – 2007



*Agricultural workers who handle cholinesterase inhibitors via mixing, loading, applying, or repairing equipment.

Crops Associated with DPP Cases for all Agricultural Pesticides

Table 31 shows the crop associated with the 60 DPP cases resulting from agricultural pesticide use in 2007. The crops involved were fruit (39) and field or vegetable (11). Six exposures were from other agricultural targets such as pastureland, a poultry farm, a Christmas tree farm, and a plant nursery. The remaining four exposures had no applicable target.

In 2007, as in past years, the leading crops associated with reported cases are tree fruit crops, a primary agricultural sector of the state economy. These are labor-intensive crops requiring workers to be thinning, pruning, or harvesting

during the same times of year that pesticides are applied. Dense planting of trees impedes the applicator's line of sight. It requires communication with farm foremen and with neighboring farms to keep all workers clear of pesticide applications. The airblast sprayer is commonly pulled by a tractor that has no enclosed cab, as it does not fit well between the rows of trees. This leaves drivers of airblast sprayers exposed to the high-pressure spray and reliant on personal protective equipment to protect them from contact with spray. The high-pressure spray is also prone to drift.

Table 31. DPP Agricultural Cases by Target Crop and Activity, 2007

Crop	Handlers		Other Workers	Bystanders		Total
Fruit	**Applying**	**Mix/Load /Repair**	**Routine Work**	**Exposed while Outdoor**	**Exposed while Indoor**	**Total**
Apples	9	3	5	1		18
Cherries	2		1	1		4
Pears	3		3	3	2	11
Grapes	1		1			2
Blueberries		1				1
Peaches			1			1
Unknown Fruit			2			2
Field and Vegetable Crops						
Potatoes	1					1
Hops	1	1				2
Mushrooms	1					1
Wheat			7			7
Other Agricultural						
Poultry	1					1
Nursery		1				1
Pasture			1	1	1	3
Christmas Trees			1			1
No Applicable Target		2	2			4
Totals	***19***	***8***	***24***	***6***	***3***	***60***

Non-Agricultural Pesticide Events

Department of Health documented 147 non-agricultural DPP cases in 2007 (Table 32). Non-agricultural events include pesticide misapplications or spills that occur at homes, commercial buildings, industrial sites, or from roadside spraying. Of the 147 DPP non-agricultural exposures, 112 (76 percent) were at a residential site at the time of their exposure. Thirty-seven (25 percent) of the individuals were working at the time of exposure and 110 (75 percent) were not at work.

Table 32. Exposure Site for Non-Agricultural, Occupational and Non-Occupational DPP Cases, 2007

Exposure Site	Occupational	Non-Occupational
Residential building or grounds (home, apartment)	12	98
Other residential institution	2	
Industrial facility	1	
Office, retail or service businesses	10	1
Park, camp, golf course	1	6
Road, right of way or vehicle	2	3
School, prison, hospital/clinic	2	
Community wide (e.g., mosquito spraying)		1
Other	6	
Unknown	1	1
Total non-agricultural pesticide use	***37***	***110***

Non-Agricultural Occupational

In 2007, of the 37 non-agricultural DPP cases that occurred on the job, 24 were males and 13 were females. Seventeen males and three females were handling pesticides.

Non-Agricultural Non-Occupational Exposures by Applicator Type

In 2007, seven of the 110 non-agricultural, non-occupational DPP cases were exposed to applications by professional (paid) applicators (Table 33). The remaining 103 exposures were due to applications made by homeowners, landlords, and coworkers. Specifically, these involved pesticide treatments of:

- Outdoor insects/slugs (6)
- Insects in or around the home (37)
- Treatments to people or pets for lice or fleas (15)
- Mosquitoes (1)
- Repellants (2)
- Gopher or rodent (3).
- Herbicides/treatments for moss, weeds, or plants (17)
- Accidental or non-targeted (22)

Table 33. Target Pest for Non-Agricultural, Non-Occupational Cases Exposed to Pesticide Applications by Professional* and Non-Professional Applicators, 2007**

	Professional Applications	Non-Professional Applications
Landscape/Garden Use		
Insects	1	6
Weeds	2	9
Moss in Lawn		3
Plant Diseases		3
Gophers		1
Use In/Around Structures		
Insects/Spiders		37
Rodents		2
Moss on Roof		2
Applications to People/Pets		
Lice/Scabies Treatments		5
Fleas on Pets		10
Repellant		2
Community - Wide Applications		
Mosquitoes	4	1
Accidental/Non -Targeted		
Non-Targeted		22
Total	***7***	***103***

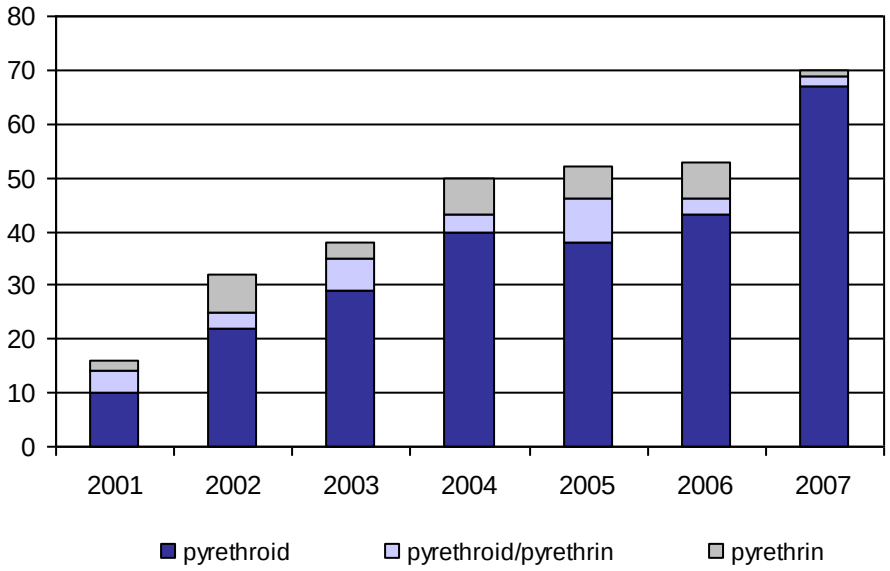
**Professional is defined as persons paid (licensed or unlicensed) to apply the pesticide.*
***Limited to cases with illness classified by Department of Health as DPP due to pesticide exposure.*

Highlight on Pyrethroid Insecticides

Following the phaseout of home use of two common insecticides in 2001 and 2003, pyrethrins and pyrethroids have become the most common pesticides in household insecticides. These products are sold as total release foggers (i.e., bug bombs), aerosol sprays, flea collars, and pump sprays. There is an increase in pyrethroid-related illnesses and injuries in Washington.

There were 70 non-agricultural-related illnesses and injuries involving pyrethrin and pyrethroid pesticides in 2007. Poisonings involving insecticide foggers accounted for one-third of these. Figure 11 shows that pyrethroid-related illnesses continue to increase in Washington.

Figure 11. DPP Non-Agricultural* Cases of Illness or Injury Associated with Pyrethrins and Pyrethroids 2001-2007



In 2008, Department of Health analyzed causal factors associated with current household insecticide aerosols and foggers, the majority of which contained pyrethroids. Department of Health summarized observations and sent a report to EPA with a joint letter from the health agency and from WSDA (Appendix F). The letter contained key findings and recommendations for improving packaging, label safety messages, and directions.

Excerpts of recommendations regarding packaging of these products include: reducing fogger package size, as some foggers treat larger areas and this may lead to overuse; adding a packaging device to allow manual deactivation; and childproofing the activation button. Excerpts of proposed label changes include directing the user to "…leave the treated area" rather than the room; specifying that "breathing this product may trigger breathing difficulty …" in people with respiratory conditions; and making warning statements more prominent. These changes can prevent the common mistake of leaving only a treated room rather than the entire premises, and may increase awareness of the potential risks to sensitive subpopulations while using these products.

In addition to submitting recommendations to EPA, Department of Health staff initiated a media campaign and developed a Web site related to fogger hazards. Department of Health alerted the medical director at WAPC and co-authored two articles to notify the public health and medical community of the potential hazards of pyrethroids. The article, "Illnesses and Injuries Related to Total Release

Foggers – Eight States, 2001 – 2006" was published in the October 17, 2008, Morbidity and Mortality Weekly Report. The study was reprinted in *Journal of the American Medical Association* in December 2008. The second article "Pyrethrin and Pyrethroid Illness in the Pacific Northwest" was published in *Public Health Reports* January–February 2009 (Vol. 124). Key findings were (1) rates of cases are increasing over time, (2) respiratory symptoms are the most common reported symptoms, (3) a small percentage of cases resulted in moderate to severe medical outcomes, including a death in Oregon, and (4) people with pre-existing conditions appear to be at higher risk for moderate to severe reactions.

Illness in Cherry Packing Facility and Methyl Bromide Use

Despite exclusion from the 2007 data set, this case is described in the PIRT report because of its magnitude and the potential for serious injury to this seasonal workforce.

Case Description

In June 2007, 15 females and three males employed in a cherry sorting and packing facility sought health care after developing sudden onset of gastrointestinal and respiratory health effects. Overall, 30 workers became ill out of the 185 working in the facility at the time of the incident. The work area was adjacent to the methyl bromide fumigation chamber. The air level of methyl bromide in the chamber was tested with a portable testing device and found to be within safe limits before opening the chamber door earlier that morning. According to workers, onset of symptoms coincided with a chlorine odor. Worker exposure to disinfection byproducts was considered but could not be determined as the cause. A technician checked the chlorine levels in the wash tank shortly after the incident, and found them within normal working parameters. Emergency medical personnel were called to the site, but could not identify a source of worker complaints three hours after symptom onset. The affected workers had not shared a common meal nor were irritant symptoms consistent with food borne illness. L&I DOSH and WSDA investigated. L&I DOSH cited the employer for lack of effective safety orientation. The case was classified as insufficient information because the cause of illness was unknown. The Department of Health could not rule out that vented methyl bromide had somehow re-entered the work area or that disinfection byproducts had volatilized from the wash tank.

Conclusions

Classification of Investigated Cases and Staffing

The number of cases Department of Health classified as DPP increased in 2007 when compared to 2006 (207 versus 149 DPP cases, respectively). Contributing to this increase was the decline in the cases classified as insufficient information, (18 percent compared to 22 percent in 2006). Unlike 2006, the Department of

Health Pesticide Program was fully staffed in 2007. Adequate staffing affects the program's ability to identify the pesticide involved in an illness and to characterize exposure details. Adequate staffing is crucial to obtain medical and spray records in a timely fashion. The number of total and DPP cases declines, and the number of insufficient cases increases when the Pesticide Program is understaffed. Another reason for classifying cases as "insufficient," particularly with agricultural cases, includes the complexity of investigating cases among a mobile and impoverished farm working population.

Severity

As in prior years, most individuals (87 percent of 2007 cases) who experienced a pesticide-related illness suffered mild symptoms. Even clinically mild symptoms may cause significant distress to individuals and their families and up to three days of lost work time. Thirteen percent of the exposures produced moderate outcomes. There were no severe medical outcomes or deaths documented as DPP in 2007, although one death was reported and was likely due to an unknown herbicide. Department of Health classified this as insufficient information.

Seasonality

Department of Health data consistently show that most pesticide illness cases occur seasonally, during the period of April through September. The peak of agricultural cases is even narrower, with half the documented DPP cases occurring April through June in 2006 and 2007.

Agricultural Cases

Numbers of agricultural workers with pesticide-related illness are down from a decade ago but have been fairly flat in the past five years. Cholinesterase inhibiting insecticides were associated with a fourth of all agricultural DPP cases in 2007. Although Department of Health is no longer the agency that tracks centralized data from the statewide cholinesterase monitoring program, the Pesticide Program continues to document a decrease in systemic poisoning from cholinesterase-inhibiting pesticides among agricultural handlers since the program was implemented in 2004.

Drift

As in prior years, drift continues to be the number one source of pesticide illness in agriculture. Numbers of drift incidents, in terms of applications or persons involved are slightly down in the past two years. Department of Health continues to study the mechanisms and risks associated with drift exposures through the drift checklist project in conjunction with NIOSH and through the drift air monitoring study funded by the Washington State Legislature 2007-2009 budget. Department of Health will complete these studies, evaluate resulting data, and provide policy recommendations in future reports.

Non-Agricultural Cases

Since 2000, the number of non-agricultural DPP cases has increased as a percentage of the total and most of these cases are associated with non-occupational use around residential buildings and grounds. Department of Health continues to explore this to determine potential causal factors and has identified pyrethroid insecticide exposure as having a major contribution. The department has undertaken a number of prevention steps to reverse this. These include an analysis of casual factors for recent pyrethroid cases, a subsequent letter to EPA with the findings and with suggestions for improving the packaging and label language, two published articles and a new website for consumers to alert them to the potential dangers of these insecticides.

Labor and Industries

Washington State Department of Labor and Industries' summary of pesticide-related activity for 2007.

Background

Within L&I, four divisions are involved in pesticide or agriculture related activities: Division of Occupational Safety and Health (DOSH), Specialty Compliance Services, Industrial Insurance Services, and Field Services.

- Division of Occupational Safety and Health has a mandate to ensure workplace safety and health. The DOSH develops and adopts occupational safety and health standards, provides stakeholder training and outreach, co-sponsors the annual Governor's Industrial Safety and Health Conference and also an Agriculture Safety Day, inspects workplaces and enforces safety and health requirements, provides technical assistance and consultation services, handles employer appeals of safety and health citations, and generates the L&I section of the PIRT report. Specifically, DOSH enforces the pesticide Worker Protection and the Cholinesterase Monitoring standards, and manages the statewide Cholinesterase Monitoring program. The DOSH Consultation Education and Outreach Program L&I Consultation Services, a division of DOSH, provides no-cost safety, health, and risk management consultations to employers. Although consultations are confidential and details are not discloseable under Chapter 49.17 RCW, summary information is provided.
- The Specialty Compliance Services Division issues farm labor contractor licenses and enforces regulations on agricultural wages, breaks, rest periods, recordkeeping requirements, and prohibited jobs for teens.
- Insurance Services provides comprehensive workers' compensation programs. The Safety & Health Assessment & Research for Prevention (SHARP) group researches pesticide and agricultural related safety and health issues. The Claims Program administers wage replacement and medical benefits for workers who become ill or injured on the job.
- Field Services provides support for several of the other L&I services in the different L&I Regions throughout the state.

The pesticide-related activities of DOSH and Insurance Services are described below.

DOSH Cholinesterase Monitoring Program

L&I adopted WAC 296-307-148, Cholinesterase Monitoring, in December 2003. The cholinesterase monitoring rule became effective February 1, 2004. This rule requires agricultural employers to document the number of hours their employees spend handling toxicity category I or II organophosphate or N-methyl carbamate pesticides. A depression in cholinesterase levels can lead to a wide range of physical symptoms, including blurred vision, headache, increased sweating, nausea, diarrhea, and fatigue. A severe depression can result in slowing of the heart rate, seizures, unconsciousness, respiratory failure, and death.

Agricultural employers are required to offer the opportunity to participate in the cholinesterase blood monitoring program to each employee who may handle covered pesticides for 30 or more hours in any consecutive 30-day period. Monitoring of cholinesterase levels in both red blood cells and blood serum can detect cholinesterase depression before the onset of illness. Employees are provided an annual baseline test prior to use of targeted pesticides. Cholinesterase activity levels are determined periodically during the application season and are compared to baseline levels. A decrease from baseline by 20 percent or more indicates potential pesticide overexposure. Although by itself a cholinesterase level depression is not a violation of the standard, it is an indicator of exposure that L&I uses to initiate review and investigation of pesticide handling practices.

To encourage participation in cholinesterase monitoring, L&I held numerous outreach and training workshops on the standard for growers, employees, and medical providers throughout the state.

Cholinesterase Monitoring Results

During the 2007 cholinesterase monitoring season (January 15 – October 4), 226 employers and 1,857 pesticide handlers (Table 34) participated in baseline cholinesterase testing. Three hundred eighty-six of these pesticide handlers were tested again (periodic testing) at least once during the application season. This assumes that the great majority of handlers submitting periodic tests met the testing requirement threshold of handling either toxicity class I or class II organophosphate or N-methyl carbamate pesticides for greater than 30 hours in any consecutive 30-day period.

Table 34. Comparison of Employer and Handler Cholinesterase (ChE) Testing and Cholinesterase Depressions in 2004 - 2007

	2004	2005	2006	2007
Employers participating in testing	380	316	244	226
Handlers submitting baseline tests	2,630	2,263	1,889	1,857 *
Handlers with at least one periodic test	580	611	471	386
Periodic tests	911	970	692	532
Handlers with ChE depression to work evaluation level	97 (16.7%)	49 (8.0%)	50 (10.6%)	49 (12.6%)
Handlers with ChE depression to exposure removal level	22 (3.8%)	10 (1.6%)	7 (1.5%)	18 (4.6%) **
Total # handlers with ChE depression	119 (20.5%)	59 (9.6%)	57 (12.1%)	67 (17.3%)

**120 handlers submitted "working baselines." This is an increase from 48 in 2006.*
***One handler experienced simultaneous ChE depressions to both the evaluation and removal levels.*

Of these 386 handlers, 49 (12.6 percent) received at least one test with a greater than 20 percent depression in cholinesterase activity (action level) requiring the employer to evaluate pesticide handling practices, and 18 (4.6 percent) were temporarily removed from exposure to covered pesticides because of a red blood cell cholinesterase depression of greater than 30 percent, or a serum cholinesterase depression of greater than 40 percent (see Table 34 for 2004-2007 comparisons).

The overall rate of handlers experiencing an action level cholinesterase depression, in the population receiving periodic testing, increased from 12.1 percent in 2006 to 17.3 percent in 2007. However, it must be noted that in 2007 the cholinesterase monitoring program changed to a new testing laboratory. That resulted in increased test variability compared to 2006. The increase in variability was more similar to that experienced during the first year of testing in 2004. As noted in the 2007 cholinesterase annual monitoring report, "red blood cell test confidence was low compared to previous years." As a result, changes were made during the 2007 season to laboratory procedures and protocols, with additional changes expected prior to the 2008 season. For more detailed information, please read the 2007 final report on the cholinesterase monitoring program at the L&I Web site http://www.lni.wa.gov/Safety/Topics/AtoZ/Cholinesterase/files/DOSH_ChE_Report07_Final_010407.pdf.

No pesticide handlers were identified with pesticide-related symptoms through the occupational monitoring program during 2007 and none has been identified during previous testing years (2004, 2005, or 2006) with pesticide symptoms and/or adverse health effects.

The number of handlers undergoing blood cholinesterase testing in 2007 was reduced by about 20 percent from the number in 2006. In addition, the number of participating employers continued its downward trend, but appears to be leveling off. This is thought to reflect industry pesticide use patterns, employer experience in identifying pesticide handlers covered by the testing requirements of the rule, and employer actions resulting in limiting handler exposure (e.g., increased use of integrated pest management techniques). To the extent that this reduction removes workers with relatively less pesticide handling, it would be expected that the average exposure of the remaining group of handlers would increase if no other workplace changes occur.

Table 35. 2007 Cholinesterase Test Activity

Month	Samples tested	Periodic tests	RBC depressions handlers*		Serum depressions handlers*	
			>20%	>30%	>20%	>40%
January	12	0	0	0	0	0
February	539	1	0	0	0	0
March	1,048	22	0	1	2	0
April	385	228	18	4	8	2
May	210	124	4	8	6	1
June	63	45	2	0	3	0
July	89	74	11	2	1	0
August	36	32	0	0	0	0
September	7	6	0	0	0	0
October	0	0	0	0	0	0
Total	***2,389***	***532***	***35***	***15***	***20***	***3***

**Two handlers experienced simultaneous red blood cell and serum ChE depression, two handlers experienced an initial ChE depression to the evaluation level then ChE depression to the removal level at next testing, and two handlers experienced an initial ChE depression a normal result at next testing then a second ChE depression at subsequent testing. In total, 67 handlers experienced at least one cholinesterase depression to the action level.*

Table 35 shows the number of baseline and periodic tests and the number of handlers with RBC and serum depressions by month in 2007.

The above cholinesterase summary information is an excerpt from the DOSH report titled “Cholinesterase Monitoring of Pesticide Handlers in Agriculture: 2007 Final Report.” The full report can be located along with the cholinesterase monitoring data on the L&I/DOSH cholinesterase monitoring website: http://www.lni.wa.gov/Safety/Topics/AtoZ/Cholinesterase/files/DOSH_ChE_Report07_Final_010407.pdf

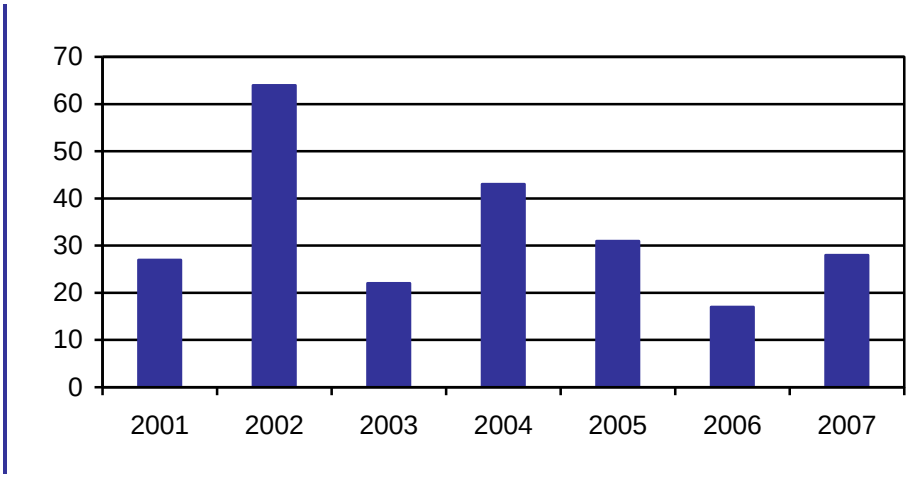
The following is the complete website for the cholinesterase program: http://www.lni.wa.gov/Safety/Topics/AtoZ/Cholinesterase/default.asp.

DOSH Enforcement and Consultation

To enforce safety and health requirements in the workplace, L&I DOSH staff members may issue citations requiring employers to implement changes in their workplace programs. Washington Industrial Safety and Health Act (WISHA) violations are typically categorized as either "serious" or "general." A serious violation presents a "substantial probability that death or serious physical harm could result from a condition which exists, or from one or more practices, means, methods, operations or processes which have been adopted or are in use, in the workplace ..." and has an assigned penalty. A general violation is a situation where the "most serious injury, illness or disease that would likely result from a hazardous condition cannot be reasonably predicted to cause death or serious physical harm to exposed employees, but does have a direct and immediate relationship to their safety and health." All violations both serious and general require employers to implement changes in the workplace and to provide DOSH with confirmation of these corrections. Follow-up inspections may be performed as needed to ensure compliance. Infrequently, employers may be issued a citation for a violation classified as "willful" when there is evidence indicating either an intentional disregard of WISHA or plain indifference to its requirements. Inspections conducted by DOSH can result in citing several different violations that may be classified as either serious or general.

This section summarizes the results of pesticide-related safety and health inspections conducted by L&I DOSH. A description of each inspection is provided in Appendix C. The number of pesticide-related inspections increased in 2007 (Figure 12).

Figure 12. DOSH Workplace Safety and Health Inspections, 2001 - 2007

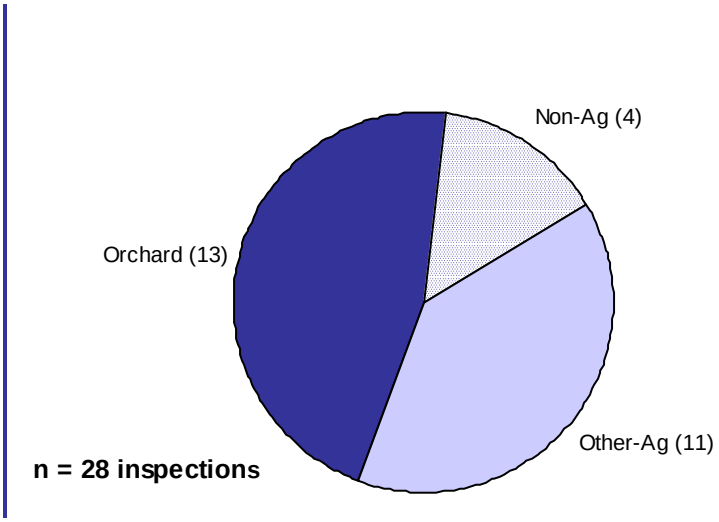


DOSH Inspections

Of the 28 inspections conducted in Washington involving pesticide-related issues, 27 (96 percent) were located in Eastern Washington and one (4 percent) was located in Western Washington. Of the 28 pesticide-related DOSH inspections in 2007, eight were referrals from state agencies, health care providers, and others. One inspection was initiated in response to an employee or employee representative complaint. Eighteen inspections were planned inspections, and one was a follow-up from 2006.

Twenty-four of the 2007 inspections occurred in agricultural environments. Four were in non-agricultural settings. Figure 13 shows the inspections by type of workplace. Thirteen (46 percent) of the inspections involved orchards. The "Other Agricultural" workplace classification included four vegetable and field crops, three greenhouse and nurseries, two wine grape farms, one dairy and one seed and feed crop. Of the four non-agricultural inspections, one was a farm supply distributor, one a hotel establishment, one a fruit packing plant, and one a forestry establishment.

Figure 13. DOSH Inspections by Type of Workplace, 2007



DOSH Inspections Involving Violations

In 2007, L&I/DOSH conducted 28 inspections involving pesticides and all 28 affected employers received citations. Monetary penalties totaling $30,935 were assessed for one "willful violation" and 36 serious pesticide-related violations from fourteen of the 28 total inspections. There were 72 general pesticide-related violations which had no assessed penalties; these were cited on 25 of the 28 inspections.

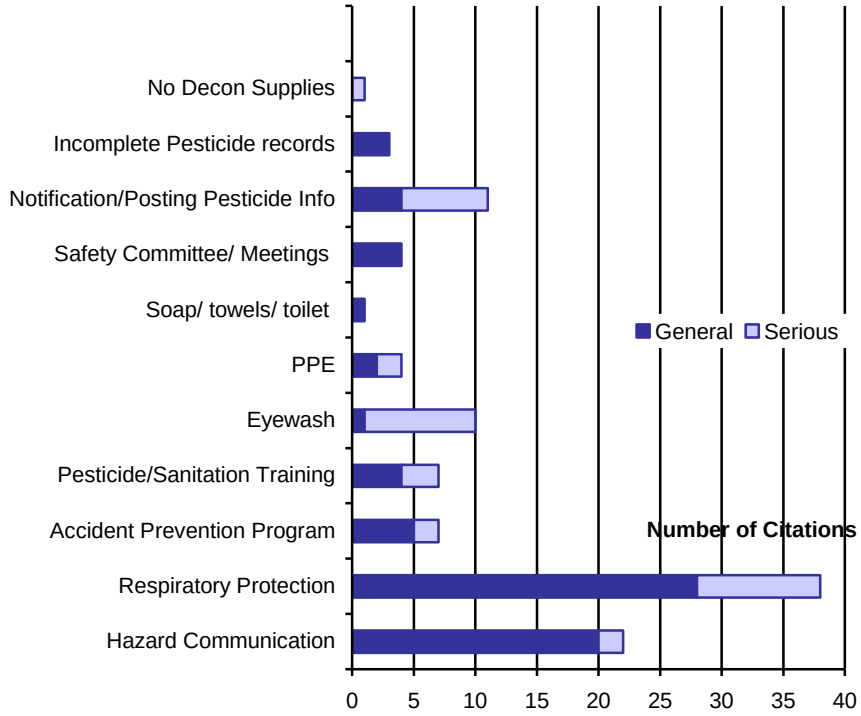
The serious "willful violation" penalty totaled $10,500. The 36 serious violations resulted in a total monetary penalty of $20,435 with an average penalty of $584.

The most frequent type of serious (36) and general (72) WISHA violations cited in 2007 were:

- Respirator deficiencies, including no respirator program, improper storage or cleaning of respirators, no medical evaluations of worker's ability to wear a respirator, or no respirator fit-testing.
- Hazard communication deficiencies in safety programs, including: missing written programs, chemical inventories, or MSDS; no employee training; or insufficient chemical labeling.
- Accident prevention program deficiencies.
- Employees not trained about pesticides, their hazards, or field sanitation.
- No emergency eyewash provided.
- Deficiencies in appropriate personal protective equipment.
- No hand-washing facilities or toilet.
- No required safety committee or safety meetings.
- Not posting safety, emergency, or pesticide spray information as required.
- Incomplete pesticide inventory.
- No decontamination supplies

General and serious violations involving pesticides are categorized by type of violation in Figure 14.

Figure 14. WISHA General and Serious Violations Involving Pesticides, 2007



L&I Claims Insurance Services Division, Claims Administration Program

The Insurances Services Division, Claims Administration Program, processes workers' compensation claims initiated by on-the-job injuries and illnesses. In 2007, the Claims Administration Program received 104 claims where the injury or illness initially appeared to be related to pesticide exposure[11] (Table 36). The number of pesticide-related claims decreased in 2007 by 5.4 percent from 2006.

L&I either accepts or rejects claims based on whether a work-related injury or illness is diagnosed. Compensation is determined in accordance with the following definitions:

- Medical Only/Non-Compensable Claim: A worker experiences symptoms that he/she believes occurred from exposure on the job and

[11] L&I claims that DOH judges to be asymptomatic or unrelated to pesticide exposure are not included in this report.

seeks medical evaluation. When a physician finds the symptoms are related to the exposure and there is objective evidence of injury, the claim is allowed. The medical evaluation and any follow-up medical care/treatment costs are paid. In this type of claim, the employee misses less than three days of work. These lost workdays are not reimbursed to the employee.

- Time Loss/Compensable Claim: A worker has an allowable claim and misses more than three days of work immediately following an exposure on the job. The worker is paid a portion of salary while unable to work. All related medical costs are covered.
- Rejected Claims: Initial diagnostic and medical evaluation costs are covered but the claim is rejected because objective evidence is lacking to relate symptoms to the workplace exposure. Claims may be rejected because symptoms have resolved by the time treatment is obtained, there is no objective evidence of injury, the worker may not yet have symptoms of illness from the exposure, or exposure cannot be confirmed or documented. A rejected status can be appealed and is often re-evaluated, but, once final, the worker can no longer reopen a claim based on original symptoms. Illness claims may be either opened or re-opened up to two years after the identification of the onset of delayed symptoms. Costs of initial medical visits are usually paid.
- Pending: Additional information is being collected on the claim before a determination can be made.
- Kept on Salary: The employer elects to pay the claimant's salary instead of L&I paying time loss payments while the employee is recovering from an injury or illness.

Table 36. Status of L&I Claims Initially Related to Pesticides, 2001 - 2007

	2001	2002	2003	2004	2005	2006	2007
Medical Only Non-compensable	75	79	83	70	62	67	81
Time Loss/ Compensable	8	4	4	4	2	4	2
Rejected	45	26	45	26	29	36	20
Pending/Unknown	-	-	1	1	-	1	-
Kept on Salary	1	-	-	-	-	1	1
Total	***129***	***109***	***133***	***101***	***93***	***109***	***104***

Claims categorized as *Medical Only* and *Time Loss* are compensated as work-related injuries. Of the 104 claims in 2007, 81 (78 percent) were compensated by L&I as being work related injuries. L&I paid either time-loss or medical benefits for a total of $60,854.00 in 2007.

As noted in the Rejected Claims definition above, most rejected claims were compensated for initial diagnostic and medical evaluations costs even if a determination could not be made to relate the symptoms to the work place.

L&I Claims Reported to Department of Health

L&I provides claims information involving pesticides to the Department of Health to investigate whether the illness or injury is pesticide-related. L&I referred 104 claims to the Department of Health to investigate during 2007[12] (Table 37). L&I assessed 83 of 104 claims as work-related. Of the 83 claims that L&I assessed as valid work related injuries, the Department of Health classified 63 (76 percent) as DPP related to pesticides. Based on the Department of Health criteria, 41 cases were classified as having insufficient evidence to assess the link with pesticides, suspicious, or unlikely to be related to pesticide exposure. Of the 20 claims that L&I rejected, the health department classified ten as likely (DPP) to be associated with pesticide exposure.

Table 37 illustrates the difference in evaluation criteria and perspective between the two agencies.

Table 37. Comparison of L&I Claims and Department of Health Classification Status, 2007

L&I Claim Determination	DEPARTMENT OF HEALTH Classification						
	Definite	Probable	Possible	Insufficient Information	Suspicious	Unlikely	Total
Medical Only/ Non-compensable	15	19	16	22	1	8	81
Time Loss/ Compensable	1	-	1	-	-	-	2
Rejected	1	1	8	5	2	3	20
Pending/Unknown	-	-	-	-	-	-	0
Kept on Salary	1	-	-	-	-	-	1
Total	***18***	***20***	***25***	***27***	***3***	***11***	***104***

Seventy-six of the 104 claims L&I referred to the Department of Health for evaluation were agricultural and 39 of these were classified as DPP related to pesticide exposure. The remaining 28 claims were non-agricultural. Department of Health classified 24 of these as DPP. These cases were employees who worked in a variety of professions including landscaping, construction, pest control, maintenance, parks, and others.

Occupational exposures are described in detail in the Department of Health Section.

[12] L&I claims that DOH judges to be asymptomatic or unrelated to pesticide exposure are not included in this report.

Washington Poison Center

Washington Poison Center's summary of phone calls received concerning human exposure to pesticides during 2007.

Background

WAPC provides 24-hour emergency medical assistance, information, and education about toxic substances or suspected poisons by way of a toll-free telephone number. Pesticide-related calls to WAPC include intentional and unintentional human exposures, confirmed and non-confirmed exposures, and requests for information only. The WAPC also receives calls concerning rodenticides, animal exposures, and other pesticide issues.

Human Exposure Calls

In 2007, WAPC received 2,077 calls concerning human exposures to pesticides. The number and percentage of pesticide-related human exposure calls has not significantly changed over the past five years (Table 38).

Table 38. WAPC Human Exposure to Pesticide Calls*, 2003 - 2007

Pesticide	2003	2004	2005	2006	2007
Fungicide	53	56	76	56	52
Herbicide	368	422	457	385	358
Fumigant	10	7	6	2	2
Insecticide	1,016	1,302	1,347	1,213	1,182
Insect repellent (e.g., mosquito, tick)	156	155	137	104	168
Animal repellent	5	17	16	16	9
Moth repellent	30	39	35	52	25
Rodenticide	299	344	356	316	281
Total*	***1,937***	***2,342***	***2,430***	***2,144***	***2,077***
Percent of Total Human Exposure Calls	2.9%	3.5%	3.6%	3.2%	3.1%
Total WAPC Human Exposure Calls **	***65,857***	***67,517***	***67,986***	***67,032***	***67,598***

** Includes human exposure calls that may or may not involve illness. Excludes information only calls.*
*** Forty-eight percent of calls were about pharmaceuticals, 30 percent about household products, cleaners, and chemicals, and nine percent about intentional exposures.*

The WAPC classifies a call as a *Human Exposure* when a caller reports he, she or someone else inhaled, ingested, injected, or inserted a pesticide, or got a pesticide on the skin or in the eyes. Human exposure calls also include situations where the caller only suspects that there was an exposure to a pesticide. Most human exposure calls do not report any perceived associated symptoms. Additional information about severity of human exposures is provided

below. Calls to obtain pesticide information only are classified as 'No Identifiable Patient' and are not considered exposures.

WAPC Human Exposure Calls Reported to Department of Health

By Washington state law, health care providers are required to report pesticide poisoning to Department of Health (WAC 246-101-105). Health care providers may report cases by calling the WAPC. WAPC helps to manage the case and forwards information to the Department of Health.

In 2004, WAPC collaborated with the Department of Health and the UW Clinical Informatics Research Group to develop a system for automated selection of WAPC call records that meet Department of Health reporting criteria. Using the UW extraction routine and a secure file transfer mechanism, files with all pertinent reports are now automatically sent from WAPC's Toxicall data system to Department of Health's Pesticide Program every 24 hours. Department of Health Pesticide Program staff then use a record review system, the Pesticide Illness Electronic Reporting System, to upload and view WAPC reports.

Department of Health reviews reports of suspected pesticide illness incidents and conducts preliminary interviews to determine if incidents should be investigated. An incident is investigated if all of the following conditions apply:

- A pesticide exposure is reported.
- Symptoms are reported.
- The pesticide exposure occurred during the last three months.
- The pesticide exposure occurred in Washington state.
- The pesticide exposure was not an intentional suicide gesture.
- The person sought care from a professional health care provider.

An incident may involve multiple cases (persons) who experience pesticide illness.

In 2007, the Department of Health reviewed all human pesticide-related illness calls to WAPC and identified 183 calls for investigation. After investigation, the agency determined that 132 of the 183 calls involved illnesses definitely (21), probably (33), or possibly (78) related to the pesticide exposure (Table 39). Case classification criteria are defined in the Department of Health section of this report (Page 50). These 132 illnesses are included in the detailed analyses of DPP cases in the Department of Health section of this report.

Table 39. Pesticide-Related Calls to WAPC Investigated by Department of Health, 2003 - 2007

Year	Investigated by DOH	DOH DPP (%)*
2003	122	88 (72%)
2004	150	128 (85%)
2005	130	100 (77%)
2006	124	80 (65%)
2007	183	132 (72%)

** Percentage of cases investigated by DOH classified as DPP related to the pesticide exposure.*

Of the 132 WAPC calls that Department of Health determined to be illnesses DPP related to pesticides in 2007, 103 involved residential exposures, 12 involved agricultural exposures, and 15 occurred in other public settings. Two exposure sites were unknown.

Cases Involving Children

In 2007, there were 30 WAPC calls involving children under the age of 18 that the Department of Health determined were DPP related to the pesticide exposure. Of these:

- Twelve exposures occurred when the product was in reach of young children.
- Nine resulted from contact to product residues (six from indoor surfaces or residues on pet, and three from outdoor residues).
- Six occurred during use of the product.
- Three resulted from accidents (spilling product, mistaking product for contact lens solution, or drinking product from a pop can).

Children's exposures are discussed in more detail on page 60 in the Department of Health Section of this report.

Type of Pesticides Involved in WAPC Human Exposure Calls

Table 40 illustrates WAPC exposure calls by pesticide type for different age groups for 2007. Fifty-seven percent (1,182) of the human exposure calls involved insecticides. Nearly half of these involved pyrethrins or pyrethroids.

In 2007, WAPC received 358 calls about potential herbicide exposures, representing 17 percent of the 2,077 pesticide calls. One hundred four (29 percent) of herbicide calls involved 2,4-D or other chlorophenoxy herbicides (i.e., MCPA, MCPP) and 121 (34 percent) involved exposure to glyphosate (the active ingredient in Roundup).

Table 40. WAPC Pesticide-Related Exposures by Age of Exposed Person, 2007

Pesticide Type	<6 Years	6-19 Years	>19 Years	Unknown Age	Total Calls
Fungicide	13	2	37	0	52
Herbicide	85	29	243	1	358
Fumigant	0	0	2	0	2
Insecticide	387	138	649	8	1,182
Animal repellent	5	1	3	0	9
Insect repellent	115	34	19	0	168
Moth repellent	11	1	12	1	25
Rodenticide	226	9	45	1	281
Totals	***842***	***214***	***1,010***	***11***	***2,077***

Table 41 lists the types of insecticides involved in human exposure calls to WAPC for 2003 through 2007.

Table 41. Type of Insecticide Involved in Human Exposure Calls, 2003-2007

Generic description	2003	2004	2005	2006	2007
Arsenic-based compounds	8	5	5	19	16
Borates/Boric Acid	22	29	49	52	72
Carbamate only	37	60	47	40	26
Carbamate with other pesticides	19	27	23	7	6
Chlorinated hydrocarbon only	26	20	20	8	11
Chlorinated hydrocarbon with other insecticide	3	4	14	5	6
Insect growth regulator	6	5	2	2	1
Metaldehyde	22	36	56	38	28
Organophosphate only	124	137	130	73	109
Organophosphate with carbamate	0	1	3	0	3
Organophosphate with chlorinated hydrocarbons	0	0	0	0	1
Organophosphate with other pesticide	28	45	26	34	31
Organophosphate/Carbamate/Chlorinated hydrocarbons	0	0	0	0	0
Pyrethrins/Pyrethroids/Piperonyl butoxide	405	529	542	556	542
Rotenone	1	3	1	5	1
Veterinary insecticide	6	11	12	5	8
Other	181	266	282	258	249
Unknown	128	124	135	111	72
Totals	***1,016***	***1,302***	***1,347***	***1,213***	***1,182***

In 2007, 176 (15 percent) of the reported insecticides contained organophosphates (144) and carbamates (32) (Table 42). Five hundred forty-two (46 percent) contained pyrethrins, pyrethroids, and piperonyl butoxide compounds, which are of lower toxicity to humans. Borates and boric acid

compounds continue to replace carbamates in use and exposures. Borates and boric acid are also of lower toxicity to humans.

Table 42. Comparison of 2007 WAPC Insecticide Calls to Department of Health DPP Insecticide Cases Referred from WAPC

Insecticide	WAPC Insecticide Calls [1]	DOH DPP Cases [2]
Organophosphates *	144 (12%)	17 (18%)
Carbamates **	32 (3%)	4 (4%)
Pyrethrins/Pyrethroids	542 (46%)	59 (63%)
Other Insecticides	464 (39%)	14 (15%)

** Includes organophosphates by themselves and in combination with other pesticides.*
*** Includes carbamates by themselves or with other non-organophosphate pesticides.*
[1] Total WAPC insecticide exposure calls is 1,182.
[2] Total DOH DPP insecticide cases received from WAPC is 94.

Organophosphates, carbamates, and pyrethroids/pyrethrins account for 61 percent of WAPC calls and 85 percent of the Department of Health insecticide DPP cases. These three classes of insecticides are more common in the Department of Health data set because they more frequently resulted in symptomatic visits to a health care provider. Reporting symptoms and seeing a health care provider are some of the criteria for a Department of Health investigation.

Severity of Human Exposures to Pesticides

WAPC classifies human exposure calls by severity of medical outcome. Definitions used by WAPC to define severity in those cases that are followed are listed below:

No Effect	The patient did not experience any symptoms.
Minor Effect	Symptoms are minimally bothersome and resolve rapidly (e.g., skin irritation, first-degree skin burn, transient cough, mild systemic symptoms such as nausea or headache).
Moderate Effect	Symptoms are more pronounced, more prolonged, or more systemic in nature. Usually some form of medical treatment is indicated (e.g., corneal abrasion, disorientation, pronounced wheezing, brief seizures that respond readily to treatment).
Major Effect	Symptoms are life-threatening or result in significant residual disability. Medical treatment is required (e.g., repeated seizures, acute cholinergic crisis, respiratory compromise requiring intubation).
Death	Symptoms resulted in the patient's death.

The WAPC follows up on calls by calling back to the home, workplace or health care facility for exposures where there are moderate or major effects present at the time of the call, or where there is a high potential for moderate or major symptoms to develop based on the history given by the caller or an evaluation of the substance.

The number of WAPC exposures with medical outcomes does not match the number of pesticide-related calls investigated by Department of Health because of differences in agency classification criteria. The health department primarily investigates WAPC referrals where medical care was sought. Table 43 shows the disposition of WAPC calls by medical outcome.

In 2007, 30 (1.4 percent) pesticide-related human exposure calls involved moderate health effects. There were no calls involving major health effects. There was one fatal case of a 70-year-old male who accidentally ingested an herbicide compound stored improperly in a pop bottle. The man was hospitalized and died three days later despite intensive medical support. The man believed the herbicide to be Roundup concentrate, but blood samples were negative for the active ingredient, glyphosate. Although Department of Health investigators believed the death was probably related to an herbicide, they classified the case as insufficient information because they could not confirm the identity of the herbicide involved. This is in accordance with NIOSH case classification guidelines. Further discussion of this case can be found in the Department of Health section of this report on page 55.

Sixteen (0.8 percent) pesticide-related calls involved intentional exposure. The Department of Health does not investigate cases where there is an intentional exposure.

Table 43. WAPC Human Exposure Calls by Medical Outcome/Disposition*, 2007

Follow-up	
No health effect	124
Minor health effect/outcome	157
Moderate health effect/outcome	30
Major health effect/outcome	0
Death	1
No Follow-up	
Nontoxic exposure	145
Minimal toxicity expected	1,394
Potentially toxic exposure**	32
Unrelated	194
Total (follow-up and no follow-up)	***2,077***

** Cases coded as 'confirmed non-exposure' are not included.*
*** Cases where the caller either refused to provide a name or contact information or there are other circumstances that did not allow follow-up.*

Appendix A
Pesticide Incident Reporting and Tracking (PIRT) Review Panel

Pesticides – Health Hazards RCW 70.104.070-090
2008 Panel Representatives
2008 PIRT Panel Coordinator
Pesticide Incident Definition
Primary Agency Responsibilities Related to Pesticide Exposure
Agency Response Time Mandates

Pesticides – Health Hazards RCW 70.104.070-090

RCW 70.104.070 Pesticide incident reporting and tracking review panel -- Intent. The Legislature finds that heightened concern regarding health and environmental impacts from pesticide use and misuse has resulted in an increased demand for full-scale health investigations, assessment of resource damages, and health effects information. Increased reporting, comprehensive unbiased investigation capability, and enhanced community education efforts are required to maintain this state's responsibilities to provide for public health and safety.

It is the intent of the Legislature that the various state agencies responsible for pesticide regulation coordinate their activities in a timely manner to ensure adequate monitoring of pesticide use and protection of workers and the public from the effects of pesticide misuse.

[1989 c 380 § 67.]

Severability -- 1989 c 380: See RCW 15.58.942.

RCW 70.104.080 Pesticide panel -- Generally.

(1) There is hereby created a pesticide incident reporting and tracking review panel consisting of the following members:

(a) The directors, secretaries, or designees of the departments of labor and industries, agriculture, natural resources, fish and wildlife, and ecology;

(b) The secretary of the department of health or his or her designee, who shall serve as the coordinating agency for the review panel;

(c) The chair of the department of environmental health of the University of Washington, or his or her designee;

(d) The pesticide coordinator and specialist of the cooperative extension at Washington State University or his or her designee;

(e) A representative of the Washington poison control center network;

(f) A practicing toxicologist and a member of the general public, who shall each be appointed by the governor for terms of two years and may be appointed for a maximum of four terms at the discretion of the governor. The governor may remove either member prior to the expiration of his or her term of appointment for cause. Upon the death, resignation, or removal for cause of a member of the review panel, the governor shall fill such vacancy, within thirty days of its creation, for the remainder of the term in the manner herein prescribed for appointment to the review panel.

(2) The review panel shall be chaired by the secretary of the department of health, or the secretary's designee. The members of the review panel shall meet at least monthly at a time and place specified by the chair, or at the call of a majority of the review panel.

[1994 c 264 § 41; 1991 c 3 § 363; 1989 c 380 § 68.]

Severability -- 1989 c 380: See RCW 15.58.942.

RCW 70.104.090 Pesticide panel -- Responsibilities. The responsibilities of the review panel shall include, but not be limited to:

(1) Establishing guidelines for centralizing the receipt of information relating to actual or alleged health and environmental incidents involving pesticides;

(2) Reviewing and making recommendations for procedures for investigation of pesticide incidents, which shall be implemented by the appropriate agency unless a written statement providing the reasons for not adopting the recommendations is provided to the review panel;

(3) Monitoring the time periods required for response to reports of pesticide incidents by the departments of agriculture, health, and labor and industries;

(4) At the request of the chair or any panel member, reviewing pesticide incidents of unusual complexity or those that cannot be resolved;

(5) Identifying inadequacies in state and/or federal law that result in insufficient protection of public health and safety, with specific attention to advising the appropriate agencies on the adequacy of pesticide reentry intervals established by the federal environmental protection agency and registered pesticide labels to protect the health and safety of farmworkers. The panel shall establish a priority list for reviewing reentry intervals, which considers the following criteria:

(a) Whether the pesticide is being widely used in labor-intensive agriculture in Washington;

(b) Whether another state has established a reentry interval for the pesticide that is longer than the existing federal reentry interval;

(c) The toxicity category of the pesticide under federal law;

(d) Whether the pesticide has been identified by a federal or state agency or through a scientific review as presenting a risk of cancer, birth defects, genetic damage, neurological effects, blood disorders, sterility, menstrual dysfunction, organ damage, or other chronic or subchronic effects; and

(e) Whether reports or complaints of ill effects from the pesticide have been filed following worker entry into fields to which the pesticide has been applied; and

(6) Reviewing and approving an annual report prepared by the department of health to the governor, agency heads, and members of the Legislature, with the same available to the public. The report shall include, at a minimum:

(a) A summary of the year's activities;

(b) A synopsis of the cases reviewed;

(c) A separate descriptive listing of each case in which adverse health or environmental effects due to pesticides were found to occur;

(d) A tabulation of the data from each case;

(e) An assessment of the effects of pesticide exposure in the workplace;

(f) The identification of trends, issues, and needs; and

(g) Any recommendations for improved pesticide use practices.

[1991 c 3 § 364; 1989 c 380 § 69.]

Effective date -- 1989 c 380 §§ 69, 71-73: "Sections 69 and 71 through 73 of this act shall take effect on January 1, 1990." [1989 c 380 § 90.]

Severability -- 1989 c 380: See RCW 15.58.942.

2008 Panel Representatives

Department of Health (Chair)	Cynthia Lopez, DrPH, MPIA
Department of Agriculture	Ann Wick
Department of Ecology	Kelly McLain
Department of Ecology	Debby Sargeant
Department of Fish and Wildlife	Bridget Moran
Department of Labor and Industries	Pam Edwards
Department of Natural Resources	Karen Ripley
General Public	Alice C. Larson, PhD
General Public	Liesl Zappler
Practicing Toxicologist	Steven Gilbert, PhD, DABT[13]
University of Washington	Richard Fenske, PhD
Washington Poison Center	William Hurley, MD
Washington State University	Allan Felsot, PhD

2008 PIRT Panel Coordinator

Department of Health	Fran McBride

[13] Dr. Steve Gilbert was the PIRT toxicologist through April 2008. PIRT lacked a toxicologist for the remainder of 2008 as one was not appointed by the Governor.

Pesticide Incident Definition

A pesticide incident includes:

- Documented or suspected human cases of pesticide poisoning reported by health care providers as stated in Title 246 WAC, Chapter 246-101 WAC.
- Suspected pesticide poisoning of animals that may relate to human illness.
- Cases of human exposure where there is concern, but no medical evidence to substantiate a pesticide poisoning.
- Emergencies relating to pesticides that represent an imminent and/or future hazard to the public and/or labor force due to the toxicity of the material, the quantities involved, or the environment in which the incident occurs.
- Documented impacts to the environment including ground, surface water or soil contamination, crop or other resource damage due to the use or misuse of pesticides.
- Violations of worker protection related to pesticide use.
- Property loss or damage from the use or application of any pesticide.

A pesticide incident appropriate for review by the PIRT Panel includes a case or situation where information received by Departments such as Agriculture, Health, or Labor and Industries indicates that the use of a pesticide may be related to a current or future threat to the public health and welfare.

A pesticide incident appropriate for resolution by the PIRT Panel is any case described above for which unresolved issues remain after agencies have conducted investigations. Incidents concerning human health are given top priority.

Adopted April 19, 1990

Primary Agency Responsibilities Related to Pesticide Exposure

Washington State Department of Agriculture

WSDA is responsible for protection of health, welfare, and the environment under authority of the Pesticide Control Act and the Pesticide Application Act. These laws give the department the authority to regulate the handling, transportation, storage, distribution, use, and disposal of pesticides and their containers. WSDA administers the Federal Insecticide, Fungicide, and Rodenticide Act and the state pesticide laws. In administering these programs, WSDA

- Adopts and administers pesticide regulations including state pesticide registration;
- Tests and certifies pesticide applicators;
- Administers continuing education requirements for pesticide applicators; and,
- Investigates complaints of pesticide misuse or misapplication.

Washington State Department of Health

Under Chapter 70.104 RCW, DOH is responsible to protect and enhance the public health and welfare related to the use of pesticides. This includes the determination and documentation of health effects resulting from pesticide poisonings and exposures, and delineation of public health risks. The major elements of DOH Pesticide and Surveillance Section are set forth in RCW 70.104.030 and include:

- Conduct medical investigations of suspected human pesticide poisonings and those animal poisonings that may relate to human illness.
- Provide technical assistance regarding health effects and risks of pesticides to health care providers, other agencies, and individuals.
- Provide community information regarding health effects of pesticide exposure.
- Secure and provide for analysis of environmental samples or human and animal tissues to determine the nature and cause of any suspect case of pesticide poisoning.
- Establish, chair, and staff the multi-agency PIRT Review Panel.
- Establish pesticide illness/exposure reporting mechanisms to be used by health care providers.
- Develop a program of medical education for physicians and other health care providers regarding pesticide poisonings.

Washington State Department of Ecology

Ecology is responsible for protection of public health and the environment, particularly under these jurisdictions: Chapter 90.48 RCW, Water Pollution Control Act; Hazardous Waste Management Act; Chapter 70.105D RCW, Model

Toxics Control Act; and, Chapter 70.94 RCW, Washington Clean Air Act. The following elements apply to pesticide incidents.

- Protect wetlands, shorelands, and water including control and prevention of pollution from pesticide activities.
- Implement an aquatic pesticide application permit system.
- Administer a regulatory and education program directed at proper management and disposal of pesticide wastes.
- Investigate and enforce remediation of incidents involving spills or environmental contamination by pesticides.
- Provide educational and technical assistance to make voluntary compliance with environmental laws easier.

Washington State Department of Labor and Industries

L&I DOSH administers the Washington Industrial Safety and Health Act of 1973, Chapter 49.17 RCW. L&I has primary responsibility for ensuring that employers provide safe and healthful working conditions for every worker in Washington state at a level which is at least as effective as the Federal Occupational Safety and Health Act of 1970. In administering Chapter 49.17 RCW, L&I:

- Conducts safety and health workplace inspections in agriculture and industry;
- Promulgates workplace safety and health standards;
- Investigates employee complaints;
- Provides employers information and consultation; and,
- Conducts training and education programs.

L&I also focuses on hazardous chemicals through administration of the Worker Right to Know Law, Chapter 49.70 RCW, and administers the Workers Compensation Program, Title 51 RCW, through the Division of Industrial Insurance.

Washington State Department of Natural Resources

The Washington State Department of Natural Resources administers the Forest Practices Rules and Regulations, Title 222 WAC, Chapter 222-38 WAC, pertaining to forest chemicals including pesticides and fertilizers. These regulations are written to protect timber resources, fish, and wildlife from the misuse or misapplication of forest chemicals. The elements of the program that apply to pesticides involve issuing permits for pesticide applications in forests and monitoring permit restrictions.

Agency Response Time Mandates

Washington State Department of Agriculture

WAC 16-228-233 directs WSDA to respond to complaints involving humans or animals immediately. All other complaint investigations must be initiated within 48 hours.

Washington State Department of Health

RCW 70.104.030 directs DOH to respond to incidents within time periods based on severity. In the event of a pesticide-related hospital admission, death, or a threat to public health, DOH must respond within 24 hours. For all other cases, DOH must respond within 48 hours after notification.

Washington State Labor and Industries

L&I response times are mandated in the Federal Occupational Safety and Health Act operations manual. Serious complaints require response within 30 days; all others within 120 days. The goal of the L&I Consultation and Compliance Services Division is to respond to serious complaints within 15 days; all others within 30 days. Response is defined as a site visit, not a telephone call.

Appendix B
Case and Severity Classifications

National Public Surveillance System Relationship Classifications
NIOSH Severity Classifications
Signs and Symptoms by Severity Category

National Public Surveillance System Relationship Classifications

Definite Case: 1. Laboratory clinical or environmental evidence corroborates exposure, 2. Two or more new post-exposure abnormal signs and/or test/laboratory findings are reported by a licensed health care provider, and 3. The finding documented under health effects are characteristic for the pesticide and the temporal relationship between the exposure and health effects is plausible and/or the findings are consistent with an exposure-health effect relationship based upon the known toxicology of the putative agent.

Probable Case: 1. Laboratory clinical or environmental evidence corroborates exposure, 2. Two or more post-exposure abnormal symptoms reported but do not meet the threshold of a definite, and 3. The finding documented under health effects are characteristic for the pesticide and the temporal relationship between the exposure and health effects is plausible and/or the findings are consistent with an exposure-health effect relationship based upon the known toxicology of the putative agent.

Or

1. Evidence of exposure based solely upon written or verbal report by case, witness, application, observation of residue and/or contamination by other than a trained profession or other evidence suggesting that an exposure occurred, 2. Two or more new post-exposure abnormal signs and/or test/laboratory findings are reported by a licensed health care provider, and 3. The finding documented under health effects are characteristic for the pesticide and the temporal relationship between the exposure and health effects is plausible and/or the findings are consistent with an exposure-health effect relationship based upon the known toxicology of the putative agent.

Possible Case: 1. Evidence of exposure based solely upon written or verbal report by case, witness, application, observation of residue and/or contamination by other than a trained profession or other evidence suggesting that an exposure occurred, 2. Two or more post-exposure abnormal symptoms reported but do not meet the threshold of a definite, and 3. The finding documented under health effects are characteristic for the pesticide and the temporal relationship between the exposure and health effects is plausible and/or the findings are consistent with an exposure-health effect.

Suspicious Case: 1. Laboratory clinical or environmental evidence corroborates exposure, or evidence of exposure based solely upon written or verbal report by case, witness, application, observation of residue and/or contamination by other than a trained profession or other evidence suggesting that an exposure occurred, 2. Two or more new post-exposure abnormal signs and/or test/laboratory findings are reported by a licensed health care provider or two or more post-exposure abnormal symptoms reported but do not meet the threshold of a DEFINITE, and 3. Insufficient toxicological information is available to determine causal the relationship between the exposure and health effects.

Unlikely Case: 1. Laboratory clinical or environmental evidence corroborates exposure, or evidence of exposure based solely upon written or verbal report by case, witness, application, observation of residue and/or contamination by other than a trained profession or other evidence suggesting that an exposure occurred, 2. Two or more new post-exposure abnormal signs and/or test/laboratory findings are reported by a licensed health care provider or two or more post-exposure abnormal symptoms reported but do not meet the threshold of a DEFINITE, and 3. Evidence of exposure-health effect relationship is not present due to no observed health or effect, a temporal relationship does not exist, or the constellation of health effects are not consistent based upon the known toxicology of the putative agent.

Insufficient Information: Insufficient data in the documentation of the pesticide exposure or insufficient data in the documentation of adverse health effects.

Not a Case: Strong evidence that no pesticide exposure occurred or insufficient toxicological information is available to determine causal relationship between exposure and health effects.

NIOSH Severity Classifications

Severity Index for Use in State-based Surveillance of Acute Pesticide-related Illness and Injury Descriptions of Severity Categories

04 Mild illness or injury: Low severity. Often involves skin, eye or upper respiratory irritation. May also include fever, headache, fatigue or dizziness. Typically the illness or injury resolves without treatment. There is minimal lost time (less than 3 days) from work or normal activities.

03 Moderate illness or injury: This category often involves systemic manifestations. Usually treatment is provided. The individual is able to return to normal functioning without any residual disability. Usually, less time is lost from work or normal activities (3-5 days) compared to those with severe illness or injury. No residual impairment is present although effects may be persistent.

02 Severe illness or injury: Considered life threatening and typically requires treatment. Commonly involves hospitalization to prevent death. Signs and symptoms include, but are not limited to, coma, cardiac arrest, renal failure and/or respiratory depression. The individual sustains substantial loss of time (more than 5 days) from regular work. Can include assignment to limited or light work duties or normal activities if not employed. This level may include the need for continued health care after the exposure, prolonged time off of work, and limitations or modification of work or normal activities. The individual may sustain permanent functional impairment.

01 Death: Includes a human fatality resulting from exposures to one or more pesticides.

Signs and Symptoms by Severity Category

(Modeled after Persson et. al., 1998 and includes SPIDER database elements)

ORGAN SYSTEM	SEVERITY CATEGORY AND CODE			
	FATAL	HIGH	MODERATE	LOW
	1	2	3	4
			Pronounced or Prolonged Signs or Symptoms	**Mild, transient, and spontaneously resolving symptoms**
• Gastrointestinal • System		• Massive hemorrhage/perforation of gut	• Diarrhea (G14, **sign only**) • Melena (GI7) • Vomiting (GI6, **sign only**)	• Abdominal pain, cramping (GI1) • Anorexia (GI2) • Constipation (GI3) • Diarrhea (GI4, **symptom**) • Nausea (GI5) • Vomiting (GI6, **symptom**)
Respiratory System		• Cyanosis (RESP 2) + Respiratory depression (RESP 7) • Pulmonary edema (RESP6) • Respiratory arrest	• Abnormal pulmonary x-ray • Pleuritic chest pain/pain on deep breathing (RESP8) • Respiratory depression (RESP7) • Wheezing (RESP9) • Dyspnea, shortness of breath (RESP4, **sign only**)	• Cough (RESP1) • Upper respiratory pain, irritation (RESP3) • Dyspnea, shortness of breath (RESP4, **symptom**)
Nervous System		• Coma (NS3) • Paralysis, generalized (NS10) • Seizure (NS5, **sign only**)	• Confusion (NS4) • Hallucinations (NS99 Other) • Miosis with blurred vision (NS14) • Seizure (NS5, **symptom**) • Ataxia (NS1, **sign only**) • Slurred speech (NS12) • Syncope (fainting) (NS17) • Peripheral neuropathy (NS11, **sign only**)	• Hyperactivity (NS2) • Headache (NS7) • Profuse sweating (NS13) • Dizziness (NS15) • Ataxia (NS1, **symptom**) • Peripheral neuropathy (NS11, **symptom**)
Cardiovascular System		• Bradycardia/ heart rate <40 for adults, < 60 infants and children, <80 neonates (CV1) • Tachycardia/ heart rate>180 for adults, >190 infants/children, >200 in neonates (CV4) • Cardiac arrest (CV2)	• Bradycardia / heart rate 40-50 in adults, 60-80 in infants/children, 80-90 in neonates (CV1) • Tachycardia / heart rate=140-180 in adults, 160-190 infants/children, 160-200 in neonates (CV4) • Chest Pain (CV7) + Hyperventilation, Tachypnea (RESP5) • Conduction disturbance (CV3) • Hypertension (CV6) • Hypotension (CV5)	

Signs and Symptoms by Severity Category

(Modeled after Persson et. al., 1998 and includes SPIDER database elements)

ORGAN SYSTEM	SEVERITY CATEGORY AND CODE			
	FATAL	HIGH	MODERATE	LOW
	1	2	3	4
			Pronounced or Prolonged Signs or Symptoms	**Mild, transient, and spontaneously resolving symptoms**
Metabolism		• Acid Base disturbance (pH< 7.15 or >7.7)	• Acid Base disturbance (pH = 7.15-7.24 or 7.60-7.69) • Elevated anion gap (MISC4)	• Fever (MISC1)
Renal System		• Anuria (GU2) • Renal failure	• Hematuria (GU3) • Oliguria (GU2) • Proteinuria (GU4)	• Polyuria (GU1)
Muscular system		• Muscle rigidity (NS9) + elevated urinary myoglobin + elevated creatinine	• Fasciculations (NS6) • Muscle rigidity (NS9) • Muscle weakness (NS8, **sign only**)	• Muscle weakness (NS8, **symptom**) • Muscle pain (NS16)
Local effects on skin		• Burns, second degree (involving >50% of body surface area) • Burns, third degree (involving >2% of body surface area)	• Bullae (DERM1) • Burns, second degree (involving <50% of body surface area) • Burns, third degree (involving <2% of body surface area)	• Skin Edema/Swelling, Erythema, Rash, Irritation/Pain, Pruritis (DERM3 - 7) • Hives/Urticaria
Local effects on eye		• Corneal ulcer/perforation	• Corneal abrasion (EYE3) • *Ocular burn (EYE2)*	• Lacrimation (EYE4) • Mydriasis (EYE6) • Miosis (EYE1) • Ocular pain/irritation/inflammation (diagnosis of conjunctivitis) (EYE5)
Other effects				• Fatigue (MISC5) • Malaise (MISC6)

Appendix C
Agency Data Summaries

Washington State Department of Agriculture
Washington State Department of Ecology
Washington State Department of Health
Washington State Department of Health – Summary of Children's Cases
Washington State Department of Labor and Industries

Agency Data Summary
Washington State Department of Ecology, Spill Program

Ecology Summary Table – 2007

City, ERTS#	Incident Date, Received Date	Medium, Waterway	Material, Quantity	Source	Cause	Impact	Action	Narrative
	Grant							
Moses Lake, 600911	9/22/07, 9/22/07	Soil	Pesticide 500 gallons	Commercial	Equipment Failure	Soil Contamination	Telephone Assistance	Spill to gravel lot, soil and gravel excavated, applied at appropriate agronomic rates to farm, no water impacted
	Klickitat							
Goldendale, 563333	6/15/07, 6/16/07	Roadway-Paved	Pesticide 200 pounds	Transportation Vehicle Truck	Improper Procedure	Contaminated Roadway/ Parking Lot	Field Response Investigation	Broken pesticide bags found along highway, cleanup conducted
	Lewis							
Chehalis, 602543	12/6/07, 12/6/07	Building/ Structure	Herbicide 44 pounds	Commercial	Natural Phenomenon	Flooding	Telephone Assistance	Recovery and reuse of product, referred to Dangerous Waste & Dept. of Ag.
Pierce								
Spanaway, 563575	6/29/07, 6/29/07	Surface Water (Fresh)	Herbicide	Commercial	Other	Water Pollution	Telephone Assistance	Planned herbicide application to lake
Tacoma, 602720	6/16/07, 6/16/07	Air, Commence-ment Bay	Herbicide 1 container	Cargo Vessel	Unknown	Air Pollution	Telephone Assistance	No impact to waters of state, scene managed by Tacoma FD Hazmat
	Skagit							
Anacortes, 564211	7/30/07, 7/31/07	Surface Water (Fresh) Lake Campbell	Herbicide	Commercial	Unknown	Water Pollution	Field Response Investigation	Planned herbicide application to lake
Spokane								

Ecology Summary Table – 2007

City, ERTS#	Incident Date, Received Date	Medium, Waterway	Material, Quantity	Source	Cause	Impact	Action	Narrative
Spokane, 561166	3/12/07, 3/12/07	Storm Drain Pipe	Herbicide 2 quarts (storm drain) 5 gallons (soil)	Commercial	Accident	None	Telephone Assistance	Dept. of Ag. handled on site cleanup
Spokane, 561945	4/17/07, 4/17/07	Soil	Pesticide 5 gallons	Illegal Dump Site	Dumping	None	Telephone Assistance	Material disposed of via Dept. of Ag.
	Thurston							
Littlerock, 560964	3/2/07, 3/2/07	Roadway-Paved	Pesticide	Unknown	Unknown	Contaminated Roadway/ Parking Lot	Field Response Investigation	RP said area smelled like pesticides, field response found no spill or source
	Whatcom							
Lynden, 560861	2/23/07, 2/23/07	Soil	Pesticide	Transportation-Vehicle Truck	Leaking Drum/ Container	Soil Contamination	Telephone Assistance	RP said pesticide sprayer leaking near blueberry field
Ferndale, 564350	8/1/07, 8/4/07	Unknown	Herbicide	Domestic	Human Factor Intentional	Unknown	Telephone Assistance & Referral	Referred to Dept. of Ag. and DOH, RP symptoms inconsistent w/ chemical exposure, no water impacted
	Yakima							
Selah, 561389	3/21/07, 3/21/07	Air	Pesticide 5 gallons	Fire-Outdoor	Fire	Air Pollution	Telephone Assistance	Grass fire led to shed burning, pesticide containers removed and disposed via Dept. of Ag.
Yakima, 563518	6/27/07, 6/27/07	Other	Pesticide 1 pint	Domestic	Human Factor Other	None	Telephone Assistance	Advised RP in proper cleanup prodcedures

Washington State Department of Health
Pesticide Incidents
Annual Summary Report of Definite, Probable, and Possible Exposures

Case	Exp Date	Incident Description
070001	12/30/2006	A 1.5-year-old male swallowed veterinary ear mite medication and had gastrointestinal symptoms. He was taken to the ER soon after the ingestion. Department of Health staff was not able to contact the parents of the child to determine how child obtained the product. However, the medical record indicates that the health provider informed family regarding better childproofing at home. Other: Pyrethrin 1 Possible severity: Low/Mild
070002	01/06/2007	A 27-year-old mother and her 4 and 6-year-old daughters were exposed to an accidental release of fogger by the 4 year-old child. The mother entered the room to take her out. The older child was with her. They all had respiratory symptoms and one of the girls had a history of asthma. EMTs were called and they were transported to the hospital. Insecticide (excluding solely IGR and fumigants): Cypermethrin (ANSI) 3 Possible severity: (3) Low/Mild
070005	01/19/2007	A 3-year-old male was alone in the garage and may have ingested a dilute mixture of diquat and two other active ingredients. He had gastrointestinal symptoms that evening and was taken to the ER. Another child commented "you stink." After leaving the ER he began to vomit again and was taken to his family doctor the next day. Provider evaluated as possible viral illness but no one else in family became ill. Herbicide/algicide: Dicamba, dimethylamine salt; Diquat dibromide; Fluazifop-P-butyl 1 Probable severity: Moderate
070006	01/24/2007	A 37-year-old female applied the product to herself due to apparently having scabies. She then had neurological, gastrointestinal, ocular and respiratory symptoms. She missed 3 days of work and sought medical care. Unknown: lindane 1 Possible severity: Moderate
070007	01/23/2007	A 56-year-old female homeowner was applying a dormant spray to her roses when the nozzle came off. The product contacted her face and eye. She immediately flushed the area, had ocular symptoms and sought medical care. Fungicide: Calcium polysulfide 1 Probable severity: Low/Mild
070008	02/15/2007	13 children (ages 13 and 14 years old) and 5 adults were seen by school nurse for temporary systemic symptoms after 2 boys used insecticide in a prank at a junior high school. None sought medical attention. Many other students were also bothered by the smell but did not go to the school nurse. Only one person reported more than one symptom. The product was intentionally dripped down halls and in other student areas, and resulted in a strong smell. Hazmat was called. The school was ventilated and the halls were cleaned. School was not evacuated. Insecticide (excluding solely IGR and fumigants): Acephate (ANSI) 1 Possible severity: Low/Mild

Case	Exp Date	Incident Description
070009	02/21/2007	A 38-year-old male orchard applicator was spraying herbicides when a branch broke the hose and he was sprayed in the face. He had ocular symptoms and sought medical care next day. Herbicide/algicide: Chloro-4,6-bis(ethylamino)-s-triazine, 2-, Glyphosate, isopropylamine salt; Glyphosate, monoammonium salt, Norflurazon (ANSI) 1 Definite severity: Low/Mild
070010	01/23/2007	A 40-year-old female employee with a history of asthma was spraying upwards for mold. The product splashed down onto her face. She had ocular, dermal and respiratory symptoms and sought medical care. She told Department of Health staff that she was not wearing eye protection. Product is labeled "Danger/Corrosive." Label states "May cause severe irritation or damage to eyes and skin...Protect eyes when handling." Disinfectant/broad spectrum for water sanitation: Sodium hypochlorite 1 Definite severity: Low/Mild
070012	03/06/2007	A 46-year-old male loaded wheat from a grain elevator to a rive barge. One hour after working, he smelled a garlic odor and felt nauseated. After 4 hours of work, he sought medical attention and presented with neurological and respiratory symptoms. Case wore no PPE while loading and worked with 4 others who did not report health effects. The wheat was uncontained for the first time during loading process, having been fumigated 5 days earlier. Immediate symptoms were consistent with fumigant exposure while later symptoms and medical treatment were more consistent with infectious process. A L&I claim was not filed. Fumigant: Aluminum phosphide 1 Possible severity: Low/Mild
070013	02/27/2007	A 54-year-old male maintenance worker sprayed bleach solution to ceiling of apartment. The nozzle clogged and the spray came out in a heavy stream instead of fine mist. Though wearing eyeglasses, the bleach went behind an over the lens into his right eye. Immediately he experienced eye pain. He rinsed both eyes and went to the clinic with ocular symptoms. He was referred to an eye specialist the next day. L&I contacted. Disinfectant/broad spectrum for water sanitation: Sodium hypochlorite 1 Definite severity: Low/Mild
070014	03/12/2007	A 64-year-old female with history of migraine headaches sprayed her kitchen counter and wall corners for ants. She immediately began to cough, developed a migraine headache, other neurological and gastrointestinal symptoms. Though she left the kitchen, the smell from the product went through out the house. She sought medical care at ER about 2 hours after her exposure. Symptoms were treated and she felt better that evening. Insecticide (excluding solely IGR and fumigants): Cypermethrin (ANSI); Imiprothrin 1 Possible severity: Low/Mild
070016	03/17/2007	A 9-year-old male went to sleep with application of scabies cream applied by mother per instructions. He awoke 12-14 hours later, the following morning with facial paresthesia. After showering the numbness persisted and the child presented at ER with chest pain and bradycardia. Unknown: Permethrin, mixed cis,trans (ANSI) 1 Probable severity: Low/Mild
070017	03/17/2007	A 56-year-old male threw the product container into the trash after he had used it. Later that evening he opened the trash bag and spray contacted his face. The can may have been defective. He sought medical care. Multiple efforts were made to contact him. Medical records were reviewed. Insecticide (excluding solely IGR and fumigants): Piperonyl butoxide; Permethrin, mixed cis,trans (ANSI); Tetramethrin (ANSI) 1 Possible severity: Low/Mild

Case	Exp Date	Incident Description
070022	03/21/2007	A 56-year-old male was talking to a friend in a department store when the friend dropped the liquid pesticide that he was holding. The herbicide splashed onto case only; into his mouth and he spit it out. Case experienced skin irritation and gastrointestinal symptoms. He went to emergency room but left before actual exam. Herbicide/algicide: Glyphosate, isopropylamine salt 1 Possible severity: Low/Mild
070023	03/16/2007	A 50-year-old male was at work when a co-worker sprayed him on the right side of his face with aerosol insecticide. He had ocular symptoms and went to the clinic within the hour. Patient took name of product to the clinic. Eyes were washed. Unable to reach the patient for follow-up. Insecticide (excluding solely IGR and fumigants): Tetramethrin (ANSI); Phenothrin, D- 1 Definite severity: Low/Mild
070025	03/24/2007	A 55-year-old male was applying herbicide to weeds in his back yard. Product blew into his face and he got a "whiff." He reports immediate onset of cardiovascular and respiratory symptoms. He went inside his home, showered and rested for two hours. Although the initial symptoms subsided, he continued to have G.I. and neurological symptoms, so he went to the E.R. While waiting at the E.R. he experienced another episode of cardiovascular and respiratory symptoms. He was admitted to the hospital's "Short stay" unit. He was released the next day when all symptoms other than weakness were gone and tests ruled out heart attack. Herbicide/algicide: Glyphosate, isopropylamine salt 1 Possible severity: Low/Mild
070026	03/21/2007	A 59-year-old farm worker reports that he was tending irrigation pipes in close proximity to pesticide applications. He could see applications and smelled pesticides and on day one developed mild neurological symptoms. He continued working on days 2 and 3, as neurological symptoms increased. He went to ER on day four, Saturday. He rested over the weekend and returned to work on Monday. He reported symptoms lasted about 7 days. No L&I claim filed. Herbicide/algicide: Paraquat dichloride, Pendimethalin (ANSI) Insecticide (excluding solely IGR and fumigants): Petroleum distillate, oils, solvent, or hydrocarbons; also paraffinic hydrocarbons, aliphatic hydrocarbons, paraffinic oil Insecticide and fungicide (1 and 4): Calcium polysulfide Insecticide and other: Diethyl O-(3,5,6-trichloro-2-pyridyl) phosphorothioate, O,O- 1 Probable severity: Low/Mild
070030	03/31/2007	A 4-year-old female found an insecticide fogger in the bathroom while the family was in the process of moving. The fogger activated in her face and she sprayed it on her arm like perfume, she reported to parents. She was taken outside for fresh air and EMT responded. Her face was red and she coughed and vomited immediately following exposure. Her health improved throughout the day, however her mother vomited and developed fever 15 hours later. The following day, the child's arm was very chapped and cracked. Insecticide (excluding solely IGR and fumigants): Cypermethrin (ANSI) 2 Possible severity: (2) Low/Mild 1 Insufficient Information severity:
070031	03/28/2007	A 78-year-old female and her 54-year-old daughter were ill after a drift exposure from a ground application to an adjacent pear orchard. Medical care was sought by daughter. WSDA investigated and swab samples taken from patients's property were positive for residues of chemicals applied in orchard. Insecticide (excluding solely IGR and fumigants): Lambda-cyhalothrin, Endosulfan (ANSI), Petroleum distillate, oils, solvent, or hydrocarbons; also paraffinic hydrocarbons, aliphatic hydrocarbons, paraffinic oil, Kaolin 2 Probable severity: (2) Low/Mild

Case	Exp Date	Incident Description
070033	03/27/2007	A 39-year-old male landscaper applied herbicide with a backpack sprayer. He developed very pruritic upper back. The sprayer leaked due to a missing washer on lid. The employer repaired the sprayers upon notification of the problem. The landscaper sought medical attention. Herbicide/algicide: Dimethylamine 2,4-dichlorophenoxyacetate; Dicamba, dimethylamine salt; Dimethylamine 2-(2-methyl-4-chlorophenoxy)propionate 1 Probable severity: Low/Mild
070034	03/30/2007	A 32-year-old male farm worker was spraying apples and wearing PPE. He reported the mask didn't fit properly. He developed dermal and neurological symptoms from the pesticide exposure and went to the hospital the next day. He reported the problem to his employer afterward and the full face mask was returned to supplier for repairs. Fungicide: Triflumizole Insecticide (excluding solely IGR and fumigants): Mineral oil - includes paraffin oil from 063503 Insecticide and other: Diethyl O-(3,5,6-trichloro-2-pyridyl) phosphorothioate, O,O- 1 Definite severity: Low/Mild
070036	04/10/2007	A 34-year-old male was splashed in the eye when he lost control of a hose while spraying. He sought medical attention when ocular and neurological symptoms worsened after initial rinse. Unknown: Ferric sulfate 1 Definite severity: Low/Mild
070038	04/11/2007	A 46-year-old male got moss killer on his hands and developed dermatitis. He was no aware of the exposure until the symptoms developed. The case sought medical attention and missed 2 days of work. The product is not registered with EPA, but active ingredient is used as a pesticide. Communication of this was made to WSDA who contacted EPA. Unknown: Sodium hypochlorite 1 Probable severity: Moderate
070039	04/11/2007	A 19-year-old female was sprayed in the face when the fogger she activated and set on shoe box fell over. She experienced respiratory effects and went to an urgent care clinic, but left before she was seen by a HCP. She reported she felt sick for a week. Insecticide (excluding solely IGR and fumigants): Tralomethrin (ANSI) 1 Possible severity: Low/Mild
070040	04/08/2007	A 34-year-old male homeowner was applying moss-out to his lawn and as he attempted to tighten applicator to hose the diluted product sprayed him in the face and both eyes. He wore no PPE. He contacted WAPC and flushed his eyes. However, he had continuing ocular and dermal symptoms for three days and sought medical care the 4th day. Herbicide/algicide: Ferric sulfate 1 Possible severity: Low/Mild
070041	04/13/2007	A 19-year-old female developed systemic symptoms after eating cereal that was left open during fogging at a friend's home two days prior. Cabinet doors were open during fogging and cereal was inadvertently left behind; bag was not closed. Patient went to the emergency room. Insecticide (excluding solely IGR and fumigants): Permethrin, mixed cis,trans (ANSI); Tetramethrin (ANSI) 1 Probable severity: Low/Mild

Case	Exp Date	Incident Description
070042	03/30/2007	A 48-year-old male farmworker who sprayed a pear orchard had an ocular exposure. The wind came up and spray drifted in behind his goggles when he turned his head. Apparently he could not access running water for 30 minutes to flush his eyes. He wore safety goggles. He had ocular symptoms and sought medical care at a clinic the next day. His PPE complied with the requirements of the label. Insecticide (excluding solely IGR and fumigants): Endosulfan (ANSI) Insecticide and fungicide (1 and 4): Sulfur Unknown: Kaolin, Mineral oil - includes paraffin oil from 063503 1 Definite severity: Low/Mild
070043	04/17/2007	A 36-year-old female, pediatrician was spraying a garden fungicide to roses at a friend's house. Wind blew back the spray to face and both eyes. She removed her contact lenses and rinsed eyes. Ocular symptoms began about two minutes after exposure and worsened through out the evening. She contacted then went to ER and was treated. She followed-up with ophthalmologist the next day. Symptoms lasted about two weeks. Fungicide: Sulfur 1 Definite severity: Low/Mild
070044	04/19/2007	A 22-year-old farmworker felt drift from a pesticide application to apples as he dug a well. An hour later he experienced gastrointestinal pain and didn't eat lunch. He was kept in the hospital overnight for light observation with central nervous system and cardiovascular signs. He was released the next day. Apparently health care personnel were unable to locate employer for pesticide identification while caring for the patient. Insecticide and fungicide (1 and 4): Sulfur 1 Probable severity: Moderate
070045	04/19/2007	A 20-year-old male was moving bags of pesticide. He was dragging one when it ripped and he inhaled product dust in A.M. Later that day he had respiratory symptoms. He sought medical care. Patient was lost to follow-up. Insecticide (excluding solely IGR and fumigants): Permethrin, mixed cis,trans (ANSI) 1 Possible severity: Low/Mild
070046	04/05/2007	A 47-year-old female was thinning branches and cleaning up cuttings in pear orchard on the day application had occurred. She reports pesticide dust all over her clothes and wrapped a rag around her face to reduce inhalation of dust. Respiratory symptoms occurred about 2 hours after beginning. Rash appeared later that day. Respiratory symptoms subsided but rash became worse over next six days. She went to the doctor six days after exposure. She reported rash lasted about three weeks. Insecticide (excluding solely IGR and fumigants): Petroleum distillate, oils, solvent, or hydrocarbons; also paraffinic hydrocarbons, aliphatic hydrocarbons, paraffinic oil Insecticide and fungicide (1 and 4): Kaolin, Calcium polysulfide 1 Probable severity: Low/Mild
070047	04/12/2007	A 28-year-old male developed systemic symptoms while spraying chemicals at work. He sought medical treatment the same day. Case did not return several phone calls. Fungicide: Pyraclostrobin; Boscalid 1 Possible severity: Low/Mild

Case	Exp Date	Incident Description
070048	04/05/2007	A 50-year-old male long- term farm employee who was working as an irrigator went to the clinic with neurological, gastrointestinal, dermal and respiratory symptoms. A pesticide applicator passed below him while he was working on a fan and he was drifted. A tank mix containing a fungicide and growth regulator was identified as the products being used on the pear trees. He had a history of becoming symptomatic when near and after spraying in the field. Fungicide: Triflumizole Insect Growth Regulator (IGR): Pyriproxyfen Insecticide (excluding solely IGR and fumigants): Mineral oil - includes paraffin oil from 063503 1 Possible severity: Low/Mild
070049	04/11/2007	A 31-year-old male and a 24-year-old male, both landscape applicators, were exposed to an herbicide when their spray nozzle malfunctioned and produced a fine mist during the application. They communicated with their employer and the nozzles were replaced. Both experienced mild symptoms and went to an occupational medical clinic. Herbicide/algicide: Dimethylamine 2,4-dichlorophenoxyacetate; Dicamba, dimethylamine salt; Dimethylamine 2-(2-methyl-4-chlorophenoxy)propionate; Mecoprop-P, Triclopyr, 2 Possible severity: (2) Low/Mild
070050	04/22/2007	A 50-year-old male homeowner splashed product in his eyes as he connected the hose to spray container. He sought health care at a clinic and reported back to that he had a scratch on his eye and was provided antibiotic cream. Herbicide/algicide: Zinc chloride 1 Definite severity: Low/Mild
070051	04/21/2007	A 3-year-old female played for about two hours in the dirt and weeds of her mother's garden, one hour after an herbicide had been applied in the garden. It is not known whether or not the product had dried prior to exposure. Mother noticed daughter had red, irritated skin on her face before bed that evening, about 4 hours after exposure. The next morning mother called since dermal symptoms had worsened. Parents took child to doctor four days after exposure. Rash resolved after about two weeks. Herbicide/algicide: Dicamba, dimethylamine salt; Diquat dibromide; Fluazifop-P-butyl 1 Definite severity: Low/Mild
070052	04/19/2007	A 62-year-old female reports neurological, dermal and increased respiratory symptoms, which began after her neighbor placed mothballs in the attic/crawl space above her double-wide mobile home one week previous. She also reports that she is frightened and has been unable to contact other for h help. She is in a wheelchair and uses a respirator. Department of Health investigator contacted her primary physician on her behalf. The Nurse reports that his patient has several health conditions that could be complicated by exposure to chemicals, and they arranged immediate transport for her to the hospital ER and follow-up visit to her office the following day. Symptoms subsided while she was out of the mobile home, and returned when she returned, until such time as mothballs were removed nine days after initial exposure. Insecticide (excluding solely IGR and fumigants): Naphthalene 1 Possible severity: Moderate
070053	04/28/2007	A 75-year-old male rinsed a pesticide application container after spraying for ants. He also removed his goggles before cleaning the equipment. On the final rinse the water squirted back into his eye. He felt minor irritation in left eye and went to the hospital as a precaution. Insecticide (excluding solely IGR and fumigants): Permethrin, mixed cis,trans (ANSI) 1 Possible severity: Low/Mild

Case	Exp Date	Incident Description
070054	04/26/2007	A 50-year-old female farm employee was pruning apple trees and developed dermal, ocular, neurological, and respiratory symptoms. An adjacent orchard was being sprayed and she could smell the spray. She went to an ER for medical care three days later. Insect Growth Regulator (IGR): Prohexadione calcium 1 Probable severity: Low/Mild
070055	04/12/2007	A 37-year-old female nursing assistant at a nursing home was bathing clients and developed generalized pruritus. The next day at work, she noticed a rash on her legs that became painful, itchy and throbbed. A PCO had applied insecticide to the bathroom and linen closet that she accessed continuously for towels. She went to the hospital and filed an L&I claim. Insecticide (excluding solely IGR and fumigants): Deltamethrin Rodenticide: Abamectin (ANSI) 1 Definite severity: Low/Mild
070058	04/30/2007	A 12-month-old female was taken to the ER after she had eaten sticky material off an ant killer product found in the home. Patient's mom reported mild gastrointestinal symptoms. Insecticide (excluding solely IGR and fumigants): Borax (B4Na2O7.10H2O) (1303-96-4) 1 Possible severity: Low/Mild
070059	04/20/2007	A 45-year-old female used several products in her yard over a 5-day period. When she applied a mix of permethrin and diazinon up into trees the spray rained back onto her. She developed cardiovascular, neurological and gastrointestinal symptoms that persisted and she sought medical care 5 days post exposure. She used no PPE. Insecticide (excluding solely IGR and fumigants): Permethrin, mixed cis,trans (ANSI) Unknown: Diazinon (ANSI) 1 Possible severity: Low/Mild
070060	04/28/2007	A 34-year-old male apple applicator developed dermal and respiratory symptoms after spraying. Patient was wearing required PPE, but still had exposure. Fungicide: Myclobutanil (ANSI) Insecticide and other: Carbaryl (ANSI) 1 Possible severity: Low/Mild
070061	05/01/2007	A 22- month-old boy grabbed a Ready-To-Use lawn herbicide container while playing and sprayed himself in the face. Child had some respiratory health effects and was taken to the ER. Herbicide/algicide: Dicamba, dimethylamine salt; Mecoprop-P; 2,4-D, Dimethylamine Salt 1 Possible severity: Low/Mild
070063	04/29/2007	A 61-year-old male applied three cans of wasp spray to a wasp nest in shed over two days. During application on second day, he had considerable exposure to the product. Two days later he awoke with hives and increasing dermal, respiratory and GI symptoms. On the fourth day he went to the ER for treatment. Two weeks later he returned to ER with respiratory and continuing dermal symptoms which he associates with the exposure. Insecticide (excluding solely IGR and fumigants): Tetramethrin (ANSI); SumithrIn 1 Probable severity: Moderate

Case	Exp Date	Incident Description
070067	04/25/2007	A 32-year-old female employee was sweeping in a potato storage warehouse. While removing the garbage she had an ocular exposure to a fungicide/bactericide that was being sprayed on the potato belt line. She had ocular symptoms, sought medical care, and was again seen for continuing eye problems. Other (Includes biological controls, plant growth regulators, antibiotics, etc.): Hydrogen peroxide 1 Probable severity: Low/Mild
070068	05/06/2007	A 71-year-old female had applied insecticide to a wood pile of pruned branches at her home. She had used a hose-end sprayer and finished around 2 pm. She began to move the pile and grabbed a branch which snapped and scattered residue of pesticide, some getting in her eyes; immediate onset of ocular symptoms. She rinsed her eyes at home. Symptoms increased so she went to ER ten hours later. Ocular symptoms lasted a week. Insecticide (excluding solely IGR and fumigants): Bifenthrin (ANSI) 1 Probable severity: Low/Mild
070069	05/06/2007	A relative of a 28-year-old female tenant set off 3 bug bombs in an apartment above a garage. The woman went into her home 5 hours later to ventilate and vacuum. She slept poorly that night and had gastrointestinal and neurological symptoms. In the morning she continued to have symptoms, sought medical care and missed two days of work. A single unit of the product was labeled for up to 5,000 cubic feet. The studio apartment was about 1,000 square feet/8000 cubic feet (standard height ceilings). Insecticide (excluding solely IGR and fumigants): Cypermethrin (ANSI) 1 Possible severity: Low/Mild
070072	05/08/2007	A 27-year-old farm worker arrived at the E.R. complaining of cardiovascular, neurological and G.I. symptoms. On arrival he was administered oxygen, due to respiratory symptoms. Apparently, he had worked for 8 hours earlier that day spraying three herbicide products and used no PPE. He was admitted, and two days later was taken by ambulance to Virginia Mason for additional care. At release from hospital four days after exposure, his symptoms were resolving and his condition was stable and improving. He was lost to follow-up. Herbicide/algicide: Glyphosate, isopropylamine salt, Dimethylamine 2,4-dichlorophenoxyacetate; Dicamba, dimethylamine salt, Paraquat dichloride; Diuron (ANSI) 1 Definite severity: Moderate
070073	05/02/2007	A 43-year-old male employee cleaned an agricultural fertilizer spreader. He was sprayed in the face "with about 40 lbs" of insecticide that was in one of the bins. He was told of the substance several hours later. He did not shower and change clothes until that evening. He then developed gastrointestinal and neurological effects and went to ER several days later. WAPC recommended cholinesterase levels but these were not done. L&I investigated and cited the employer for numerous safety violations pertaining to PPE and pesticide information for employees. Insecticide and fungicide (1 and 4): Ethoprop (ANSI) 1 Possible severity: Low/Mild
070074	04/26/2007	A 32-year-old female office manager for a pesticide wholesaler developed headache and GI symptoms as she worked in a non-ventilated copy room. A co-worker had just made a copy of an organophosphate label that had residue on it. The label had a strong smell. At the urging of fellow staff and manager, she went to the ER and returned to work the same day. Unknown: Methyl parathion 1 Possible severity: Low/Mild

Case	Exp Date	Incident Description
070075	05/13/2007	A 37-year-old licensed applicator smelled odor from farm shed and found pesticide leaked on floor from an old rusted can. He suited up in full PPE and returned to clean up the spill. After about 10 minutes in the shed he experienced neurological, GI and respiratory symptoms. He showered at home but when symptoms continued, he went to the ER within one hour of exposure. Insecticide (excluding solely IGR and fumigants): Espesol 3A; Demeton 1 Definite severity: Moderate
070076	04/18/2007	A 26-year-old pregnant coffee shop employee developed red, itchy rash on arms after working in kitchen that was sprayed in morning. Rash dissipated after 30 minutes and patient went to hospital for check-up. Insecticide (excluding solely IGR and fumigants): Deltamethrin 1 Possible severity: Low/Mild
070077	05/10/2007	A 16-year-old male mistook flea drops for contact lens solution and applied it to his right eye. He had immediate symptoms. He rinsed his eyes and was taken to the ER. Symptoms resolved with medication in about two days. Insecticide (excluding solely IGR and fumigants): Phenothrin, D- 1 Probable severity: Low/Mild
070079	05/16/2007	A 38-year-old female homeowner pulled into her driveway as her spouse was spraying adjacent to the driveway. Within 5 minutes she had neurological, gastrointestinal, ocular and dermal symptoms. She was seen at the ER and was better after 48 hours. She had a history of multiple chemical sensitivity and notification forms (WSDA) were provided to her. Herbicide/algicide: Dicamba, dimethylamine salt; 2,4-dichlorophenoxyacetic acid 1 Possible severity: Low/Mild
070081	05/17/2007	An 86-year-old female was exposed to blow-back of pyrethrin spray as she applied it under sink of kitchen for roaches. She described G.I. and respiratory symptoms within a minute of exposure. She was taken to clinic and symptoms resolved within two hours. Insecticide (excluding solely IGR and fumigants): Lambda-cyhalothrin; Prallethrin 1 Possible severity: Low/Mild
070083	05/05/2007	A 24-year-old male applied pesticides to an apple orchard. His eye began hurting and he notified his supervisor. It was reported that patient told him there wasn't a splash or specific injury, yet a pesticide went into his eye that day while spraying. The doctor diagnosed chemical burn the next day. A patient interview was not conducted as Department of Health was unable to contact him. Insecticide (excluding solely IGR and fumigants): Methoxyfenozide Insecticide and other: Carbaryl (ANSI) 1 Probable severity: Low/Mild
070085	05/17/2007	A 43-year-old male sprayed for ants with trigger spray when top loosened and insecticide went into his right eye. He rinsed immediately and put saline solution in eye the following day. He went to ER two days following exposure for intense ocular pain and decreased vision. He had corneal ulceration, abrasion and chemical conjunctivitis. Unknown: Malathion (ANSI) 1 Definite severity: Low/Mild

Case	Exp Date	Incident Description
070086	05/19/2007	A 17-year-old female applied flea spray to her three dogs. She alternated among dogs, spraying for a few seconds to a minute, then rubbing it into the fur. After 45 minutes she had neurological, GI and respiratory symptoms. She did not wear label- required gloves. She was taken to the Urgent Care Clinic, observed, and released. Symptoms lasted a total of about three hours. Insecticide (excluding solely IGR and fumigants): Fipronil 1 Possible severity: Low/Mild
070087	05/07/2007	A 58-year-old female and related 41-year-old male were living in two separate residences on the same property. They described a neighbor applying a herbicide when the wind was blowing towards them. They said they could taste and smell the spray. Both had one gastrointestinal symptom and several respiratory symptoms. The woman sought medical care. WSDA was called but decided not to open a case when the complainants did not return their calls. Herbicide/algicide: Butoxyethyl 2,4-dichlorophenoxyacetate; Butoxyethyl triclopyr 2 Possible severity: (2) Low/Mild
070090	05/24/2007	A 24-year-old male, along with 20 other employees, was staking newly planted apple trees. He experienced ocular, gastrointestinal and neurological symptoms after smelling application being made to adjacent cherry block. He is only one who reported any symptoms. He sought medical care. Case was investigated by L&I. No spray residues detected on patient's sweater he was wearing. Fungicide: Propiconazole Insecticide and fungicide (1 and 4): Sulfur 1 Possible severity: Low/Mild
070091	05/26/2007	A 4-year-old boy walked barefoot around the apartment complex where insecticide dust had been applied earlier in the day. That evening, his aunt noticed that his feet had a powdery substance on them and that there were dermal symptoms on both feet. She bathed him and put him to bed. The next morning symptoms worsened and he was taken to the ER. Dermal symptoms lasted for 31/2 days. Insecticide (excluding solely IGR and fumigants): Permethrin, mixed cis,trans (ANSI) 1 Probable severity: Low/Mild
070092	05/21/2007	A 45-year-old physically disabled female was using two products in her home to counter fleas and her dog's worms. She applied both to furniture, carpets and the litter box daily for one week. She began to have neurological and respiratory symptoms the 2nd day and after one week she sought medical care. PPE not worn and not required per label. Disinfectant/broad spectrum for water sanitation: Ethyl alcohol; Alkyl* dimethyl benzyl ammonium saccharinate *(50 percent C14, 40 percent C12, 10 percent C16) Insecticide (excluding solely IGR and fumigants): Deltamethrin; S-Bioallethrin 1 Possible severity: Low/Mild
070094	05/14/2007	A 35-year-old farmworker was mixing herbicides for tractor application to apple orchard when he began to itch on his neck, then on his arms. He went to the clinic that same day and was diagnosed with urticaria. He wore the label's required PPE. Herbicide/algicide: Norflurazon (ANSI), Carfentrazone-ethyl, Glyphosate, isopropylamine salt 1 Probable severity: Low/Mild
070095	05/28/2007	A 23-year-old male experienced an ocular exposure to flea powder while the family cat was being treated. He flushed his eyes for 15 minutes and still sought medical care for ocular symptoms. Insecticide (excluding solely IGR and fumigants): Tetrachlorvinphos 1 Probable severity: Low/Mild

Case	Exp Date	Incident Description
070097	06/01/2007	Two adult staff members, ages 47 and 59, reported mild transitory symptoms from an herbicide aerial application to a pasture adjacent to juvenile rehabilitation center where they worked. One individual had just one respiratory symptom. No medical care was sought by either individual. No students at the center reported symptoms. Staffers did report they could smell the spray coming through the air conditioning system. WSDA took swab samples from the air conditioner but did not detect measurable levels of the herbicide. Herbicide/algicide: Metsulfuron-methyl 1 Possible severity: Low/Mild 1 Insufficient Information severity:
070098	05/28/2007	A 29-year-old male leaned into an abandoned car, sprayed it heavily, and then also sprayed upwards to a house awning. He had neurological, respiratory and cardiovascular symptoms. EMTs were called after his symptoms worsened over four days. He refused further medical care but will use a mask in the future. He was wearing sunglasses. Insecticide (excluding solely IGR and fumigants): Permethrin, mixed cis,trans (ANSI); Tetramethrin (ANSI) 1 Possible severity: Low/Mild
070099	05/30/2007	A 44-year-old male had contact with his dog in his home. He was unaware that flea drops had been applied. He developed eye irritation and WAPC recommended he seek health care. Multiple (product is classified as multiple classes …): Methoprene, S-; Phenothrin, D- 1 Possible severity: Low/Mild
070103	05/16/2007	A 30-year-old male landscape applicator was applying an herbicide around a house and the nozzle detached from the hose. He was splashed in both eyes. He sought medical care that day. Herbicide/algicide: Dicamba, dimethylamine salt; Dimethylamine 2-(2-methyl-4-chlorophenoxy)propionate; MCPA, dimethylamine salt; Mecoprop-P 1 Probable severity: Low/Mild
070104	05/16/2007	A 42-year-old farmworker, unlicensed, waited in line to refill his tank. Pesticide splashed in his eye as his co-worker mixed his tank next to him. He wore a respirator, but no goggles. L&I and Department of Health investigated and L&I issued citation for improper respirator maintenance and lack of water for emergency use in pesticide loading and application areas. He notified supervisor at noon and was told to continue working. A clinic visit 6 days later revealed chemical conjunctivitis with vision loss. Herbicide and Fungicide (03 & 04): Paraquat dichloride Herbicide/algicide: Carfentrazone-ethyl 1 Definite severity: Low/Mild
070105	05/24/2007	A 23-year-old female was working with 20-25 others tying up grapes and reported she could smell the application being made to adjacent grape unit. She sought medical care the same day for respiratory symptoms. No one else reported any illness. Fungicide: Fenarimol (ANSI) 1 Possible severity: Low/Mild
070106	06/01/2007	A 53-year-old female with chronic obstructive pulmonary disease was sitting in her small (6x8) room when the product was sprayed. Someone left the room and shut the door. The windows were closed and she had respiratory symptoms. The fire department responded and administered oxygen. Insecticide (excluding solely IGR and fumigants): Deltamethrin; S-Bioallethrin 1 Possible severity: Low/Mild

Case	Exp Date	Incident Description
070108	06/03/2007	A 44-year-old male with a history of asthma was given an aerosol pesticide and put it on the shelf above his bed. During the night it leaked through a pinhole. In the morning his covers and bed clothes were wet from the release. He had neurological, gastrointestinal and respiratory symptoms. He went directly to the ER. Information was given to him by Department of Health on safe storage and the importance of reading the label. Insecticide (excluding solely IGR and fumigants): Allethrin, d-; Tralomethrin (ANSI) 1 Probable severity: Moderate
070109	06/02/2007	A 37-year-old and 4-year-old daughter were exposed to pesticide fumes in their car when pesticide container fell over and ruptured under the back seat. Child was in car seat in the back seat. Child is asthmatic and began coughing within two minutes of exposure. Mother remained asymptomatic. Child taken to doctor 2 days later for continuing respiratory symptoms. Fungicide: Clarified hydrophobic Extract of Neem Oil 1 Definite severity: Moderate
070111	05/11/2007	A 21-year-old farmworker sprayed herbicides in an orchard and developed an itchy rash on the back of his neck and on his hand. He went to a clinic. Herbicide/algicide: Carfentrazone-ethyl, Glyphosate, isopropylamine salt 1 Probable severity: Low/Mild
070112	06/07/2007	A road construction crew was exposed by aerial application to a wheat field, adjacent to its work site. Seven crew members report seeing the plane make passes overhead, release the product and state they could smell the product as it drifted on to them. The seven workers describe very similar symptom patterns, including chemical taste in mouth, gastrointestinal, neurological and dermal symptoms. Due to their desire to continue working and their semi-isolated location, as well as concern about cost of treatment, none of these workers sought health care at the time. They were able to wash hands and faces about 2 hours after exposure, and continued working. Symptoms lasted from 3 hours to 4 days after exposure. WSDA lab analysis detected residues on clothing, and on the exterior and interior of machinery used. Wind gusts of 10 or more mph have been measured in the area at the time. Note: WSDA fined applicator $2,000. Labor and Industries WISHA inspector was called in and consulted with the air service company involved. Herbicide/algicide: Clodinafop-propargyl, Prosulfuron, MCPA, 2-ethylhexyl ester 5 Probable severity: (5) Low/Mild 1 Possible severity: Low/Mild 1 Insufficient Information severity:
070113	06/07/2007	A 43-year-old female homeowner tried unsuccessfully to use non pesticide strategies to combat aphids in her fruit trees. She then applied an organophosphate product when the wind was blowing. She was wearing night clothes and sandals and used a plastic hand-held spray bottle as a sprayer. She then had extensive neurological symptoms as well as cardiovascular & respiratory symptoms. She was ambulanced to the hospital. She was admitted to the ICU, responded to atropine and was discharged the next day. She was referred to the U W for paroxonase testing. Insecticide (excluding solely IGR and fumigants): Malathion (ANSI) 1 Probable severity: Moderate

Case	Exp Date	Incident Description
070116	05/09/2007	A 20-year-old male unloaded furniture from a large moving trailer for about 1.5 hours. The trailer had been fumigated with 3 bug bombs the previous day. The patient reported that the trailer was opened for the first time when he began unloading furniture. He experienced sinus irritation and some difficulty breathing while in the trailer, but no other health effects and worked the rest of the day and drove home. That evening his friend called EMS after witnessing the patient shake with full body seizures twice, about 15 seconds each. He was confused and dehydrated. He had no previous history of seizure activity and there were no unusual findings from his subsequent hospital visit. Insecticide (excluding solely IGR and fumigants): Cypermethrin (ANSI) 1 Possible severity: Low/Mild
070117	05/29/2007	A 33-year-old male experienced ocular symptoms after making application to cherries. He sought medical care. He reported to Department of Health that he wore PPE. However the health care provider advised him to wear goggles. Fungicide: Myclobutanil (ANSI) Insecticide (excluding solely IGR and fumigants): Azinphos-Methyl, Imidacloprid 1 Possible severity: Low/Mild
070119	05/26/2007	A 43-year-old male went to the ER with ocular symptoms after applying to hops the previous two days. While applying, he was wearing full protection and could not describe a specific exposure. Fungicide: Trifloxystrobin Insecticide and fungicide (1 and 4): Sulfur 1 Possible severity: Low/Mild
070121	06/12/2007	A 25-year-old male apple applicator experienced an ocular exposure and symptoms while loading his sprayer. Spray records indicate he was loading soluble wettable powder packets. He reported that powder blew up into his right eye. He was wearing sunglasses rather than label-required eye protection. He notified his manager, flushed the eye and went to ER for treatment. Department of Health unable to contact patient for interview. Insecticide (excluding solely IGR and fumigants): Azinphos-Methyl 1 Definite severity: Low/Mild
070125	03/28/2007	A 78-year-old male reported symptoms from pesticide drift from a neighboring cherry orchard. He experienced gastrointestinal, respiratory and dermal symptoms. He did not seek medical care. WSDA samples showed evidence of pesticide residues at the site of exposure. Insecticide (excluding solely IGR and fumigants): Petroleum distillate, oils, solvent, or hydrocarbons; also paraffinic hydrocarbons, aliphatic hydrocarbons, paraffinic oil Insecticide and fungicide (1 and 4): Sulfur Insecticide and other: Diethyl O-(3,5,6-trichloro-2-pyridyl) phosphorothioate, O,O- Other (Includes biological controls, plant growth regulators, antibiotics, etc.): Butanoic acid, 4-amino- (9CI) (CA INDEX NAME); Glutamic acid (9CI) (CA INDEX NAME), L- 1 Probable severity: Moderate
070128	06/04/2007	A 30-year-old male applied herbicide with a backpack sprayer to thistle as part of right of way maintenance. One hour after completing the application he developed dry, itchy eyes. His eyes worsened and he went to an optometrist the next day. He did not wear goggles because they would fog up. Herbicide/algicide: Triclopyr 1 Definite severity: Low/Mild
070129	06/15/2007	A 69-year-old male homeowner used a garden hose to activate the product that was applied two days prior for moss on his roof. When it hadn't rained, he watered the roof to activate the pesticide. His eyes started to burn. He couldn't feel it on his skin and there was no wind. He was not wearing protective eyewear. He sought medical care. Herbicide/algicide: Zinc Sulfate 1 Possible

		severity: Low/Mild
Case	**Exp Date**	**Incident Description**
070131	06/16/2007	A 69-year-old male and 59-year-old female reported feeling and smelling drift from an orchard sprayer while working in their home yard. A 43-year-old female neighbor and her husband also reported smelling drift from same application. All four people reported neurological and respiratory symptoms the same day. Three sought medical care. WSDA investigated and tested foliage from the yard of one of the households. Samples were positive for thiamethoxam and applicator was cited for drift. Yard foliage was also positive for residues of azinphos methyl, which had been applied in the same orchard 4 days prior to this incident. Department of Health investigation found that while pesticide exposure likely contributed to the initial symptoms reported, it did not fully explain all symptoms, especially persistent symptoms. Insecticide (excluding solely IGR and fumigants): Thiamethoxam, Mineral oil - includes paraffin oil from 063503 2 Probable severity: (2) Low/Mild 1 Possible severity: Low/Mild
070135	06/07/2007	A 25-year-old farmworker sprayed apple orchard wearing PPE, but under spray got in his eye. Patient lost to follow-up, unknown details. Patient sought medical attention next day and returned to work. Insecticide (excluding solely IGR and fumigants): Azinphos-Methyl, Novaluron 1 Probable severity: Low/Mild
070137	06/21/2007	An 18-year-old male was working as day laborer. He was on a ladder with a bucket containing a moss killer. He was going to apply with a sponge to the roof. The product splashed into his left eye. He wore synthetic gloves and no eye protection. He was wearing contact lenses at the time. His eyes were rinsed immediately while at work. He was taken to clinic approximately two hours after exposure. Eye symptoms remained for several weeks. Herbicide/algicide: unknown 1 Definite severity: Low/Mild
070138	06/08/2007	A 62-year-old retired PCO mixed pesticides and applied to his and his neighbor's property in a community-wide event to eradicate mosquitoes, ticks and unwanted brush. He used a backpack sprayer over 3 consecutive hot summer days. He did not use any PPE. He wore tennis shoes, jeans and cotton shirt, and reports they were wet by the end of the day. Respiratory and GI symptoms began on day one, which he ignored. By the third day he was experiencing neurological, GI, cardiovascular and continuing respiratory symptoms. He was taken to the ER. The apparent neurological, GI and cardiovascular symptoms receded about 1 month after initial exposure. Respiratory symptoms were still present on call-back 4 months after exposure. Herbicide/algicide: Triethylamine triclopyr Insecticide (excluding solely IGR and fumigants): Diazinon (ANSI), Lambda-cyhalothrin 1 Definite severity: Moderate
070139	06/21/2007	An 82-year-old female was intending to spray ants on kitchen counter. The nozzle was misdirected and she sprayed her face and eyes. Dermal and eye symptoms began immediately. She washed face and eyes in sink and went to bed. Next morning symptoms had worsened, so she was taken to clinic for treatment. Symptoms lasted for about five days. Insecticide (excluding solely IGR and fumigants): Cypermethrin (ANSI); Imiprothrin 1 Definite severity: Low/Mild

Case	Exp Date	Incident Description
070140	06/27/2007	Two females, aged 40 and 45, were working in a 1,000–square-foot 2-story office building. The AC was on while a PCO applied outside around the perimeter. Both employees developed neurological symptoms. The next day when the older woman entered the office she had stronger symptoms and sought medical care at an ER. Three days after the application, the company owner, a 34-year-old female, noticed a chemical smell, a metallic taste and was nauseous. All three women had lingering health effects at work for 2 weeks. WSDA conducted an investigation and took swab samples. A different class of pesticides than those reported by the PCO was found. Both were in the PCO's truck and could be legally applied as general insecticides and to be applied indoors. It appeared that the pesticide entered the indoor air by the AC system that was near the exposed crawl space along the perimeter of the office. WSDA issued a Notice of Correction. Insecticide (excluding solely IGR and fumigants): Bifenthrin (ANSI) 1 Definite severity: Moderate 2 Probable severity: (2) Low/Mild
070141	06/12/2007	A 49-year-old male was mowing with a tractor in an apple orchard when he was exposed to insecticide from a ground sprayer 15' away. Neither worker was aware of the other prior to drift. Patient informed his supervisor and was taken to a clinic and treated for skin and eye irritation. He requested to return to work the next day. Insecticide (excluding solely IGR and fumigants): Phosmet 1 Probable severity: Low/Mild
070143	06/30/2007	A 50-year-old female dug with bare hands in her garden where her spouse had placed pellets to repel gophers. She developed prolonged gastrointestinal symptoms as well as neurological symptoms. She was taken to the ER. The product had been stored by a previous home owner in a jar without a label. The spouse recognized it from his past use of same. Rodenticide: Aluminum phosphide 1 Possible severity: Low/Mild
070144	07/01/2007	A 29-year-old female applied insecticidal dust to the lawn of her home and received blow-back to both eyes. Eye symptoms occurred within two minutes. She rinsed her eyes. The next day she called WAPC for advice and then sought care at ER. Ocular symptoms were improving when interviewed two days post exposure. Insecticide (excluding solely IGR and fumigants): Permethrin, mixed cis,trans (ANSI) 1 Definite severity: Low/Mild
070146	06/14/2007	A 24-year-old male applicator was treating noxious weeds (spartina) in the tidal flats. The clamp on a pressurized sprayer popped off and shot spray into his eye. He developed ocular and neurological symptoms and sought medical care. The symptoms resolved in a day. Herbicide/algicide: Imazapyr, isopropylamine salt, Glyphosate, isopropylamine salt 1 Definite severity: Low/Mild
070147	06/02/2007	A 29-year-old licensed applicator developed respiratory and brief systemic symptoms after 1.5 hours of spraying herbicide with backpack sprayer. He was not wearing all required PPE because it was hot. He was seen in ER and symptoms rapidly resolved. Herbicide/algicide: Butoxyethyl 2,4-dichlorophenoxyacetate; Butoxyethyl triclopyr, Glyphosate, isopropylamine salt 1 Probable severity: Low/Mild
070148	06/24/2007	A 59-year-old female had applied the product to her flowers. She was not wearing goggles (not required) and the wind was blowing. She had ocular and dermal symptoms. She sought medical care but did not describe the exposure to her provider. Fungicide: Clarified hydrophobic Extract of Neem Oil 1 Possible severity: Low/Mild

Case	Exp Date	Incident Description
070153	05/24/2007	A 25-year-old female vocational counselor was assisting a disabled person to learn skills at a restaurant. The latter was asked to apply the product without benefit of training. The counselor was standing down hill when the product was applied and with the wind blowing she inhaled it. She sought medical care the next day for gastrointestinal, neurological and respiratory symptoms. Herbicide/algicide: Glyphosate, isopropylamine salt 1 Possible severity: Low/Mild
070154	07/02/2007	An 18-year-old male construction worker received a splash to his face when unscrewing lid on a sprayer that was still pressurized. He rinsed eyes immediately and sought medical care for eye irritation. Symptoms resolved rapidly. Unknown: Glyphosate, isopropylamine salt 1 Definite severity: Low/Mild
070155	07/12/2007	A 9-year-old male hugged his dog immediately after the dog's flea dip and drop application. He developed pain and swelling on his face including eyes. He went to the ER. He has history of asthma and allergies, including similar symptoms when handling mice and rats. Insecticide (excluding solely IGR and fumigants): Piperonyl butoxide; Permethrin, mixed cis,trans (ANSI) 1 Definite severity: Low/Mild
070157	07/07/2007	A 39-year-old female landscaper used a backpack sprayer to apply 2 herbicides to weeds in a lawn. She didn't wear a mask and inhaled some of the herbicide, which also got on her hand. She developed neurological health effects and nausea within 2 hours of spraying. She went to the hospital within 36 hours of exposure. She lost 1 week of work following exposure. The landscaper decided to discontinue use of these herbicides in the future. Herbicide/algicide: Dicamba, dimethylamine salt; Mecoprop-P; 2,4-D, Dimethylamine Salt, Triethylamine triclopyr 1 Possible severity: Moderate
070159	07/11/2007	A 20-year-old male college student was spraying for a farmer during the summer break. He applied one day and had gastrointestinal and neurological symptoms. He again sprayed a week later and again developed symptoms and went to the ER. Herbicide/algicide: Dicamba, dimethylamine salt 1 Possible severity: Low/Mild
070161	06/30/2007	A 37-year-old male farmworker got paraquat in his eye, despite wearing goggles. Returning from break, he and a coworker reached for spray nozzles and the co-worker accidently pressed the release trigger, spraying the patient on the forehead. Herbicide dripped into the eyes around safety goggles. He used eye rinse and went to ER. Herbicide/algicide: Paraquat dichloride 1 Definite severity: Low/Mild
070162	07/09/2007	A 32-year-old landscaper was on a ladder trimming tree limbs while a commercial applicator in an adjacent yard, with a fence between, was spraying. Despite acknowledging one another working, the applicator sprayed shrubs directly in front of the landscaper. His lips were numb and he had respiratory symptoms but did not seek medical care. WSDA took samples that were positive and issued a Notice of Correction. Insecticide (excluding solely IGR and fumigants): Bifenthrin (ANSI) 1 Probable severity: Low/Mild

Case	Exp Date	Incident Description
070167	07/14/2007	Twenty-one campers ages 5-61 (4 families) reported some or no health effects on different dates over a 2-week span after applications were made at the resort. A licensed PCO drove through the resort, fogging 3 times around midnight over a 5-day period. The campers were in tents or campers in 4 adjacent campsites during the applications. The tents were as close as 15 feet to the road. Six of the 21 sought medical care. Ten reported fevers and primarily GI and respiratory health effects. A resort employee reported having a "stomach flu." WSDA investigated and a Notice of Correction was issued relevant to the spray records. Three of the campers were asymptomatic. Insecticide (excluding solely IGR and fumigants): Malathion (ANSI) 4 Possible severity: (4) Low/Mild 13 Unlikely severity: 1 Insufficient Information severity:
070169	07/25/2007	A 4-year-old female apparently was playing with other children and had the container of insect repellent. Spray contacted her eyes and she was taken to the ER. Phone for parents of child was disconnected and so an interview was not completed. Repellent: Unknown 1 Possible severity: Low/Mild
070170	07/24/2007	A 15-year-old male accidentally took one swallow of a herbicide from a pop can. Shortly after he experienced systemic symptoms. He sought medical care. The product had been brought home by a family member who was a licensed applicator. Herbicide/algicide: Dimethylamine 2,4-dichlorophenoxyacetate 1 Possible severity: Low/Mild
070173	06/20/2007	A 33-year-old male applicator was applying a tank mix to an orchard and his respirator didn't function properly. He experienced breathing difficulties using the respirator. He reportedly removed the respirator on turns so that he could breath. He sought medical attention and refrained from spraying per doctor's request to recuperate. Fungicide: Myclobutanil (ANSI) Insecticide (excluding solely IGR and fumigants): Epimethylamino-4-deoxyavermectin B1a and B1b benzoates, 4-, Clofentezine (ANSI), Pyridaben (proposed) 1 Probable severity: Low/Mild
070175	07/10/2007	A 61-year-old disabled female tenant and her two female caregivers, ages 42 and 38, reported symptoms after products were commercially applied in the kitchen of the home. Another product had been applied by the landlord two weeks before. The tenant said she left the premises and did not return until that evening. WSDA investigated and the PCO said the tenant entered during the application. The tenant and caregivers developed dermal (1), neurological (3), respiratory (1), gastrointestinal and ocular symptoms. The PCO returned eight days after the applications to do a clean up. Insecticide (excluding solely IGR and fumigants): Bendiocarb (ANSI), Pyrethrins; Piperonyl butoxide, Pyrethrins; Piperonyl butoxide; Cyfluthrin, Esfenvalerate 3 Possible severity: (3) Low/Mild
070176	07/27/2007	A 59-year-old unlicensed male farm owner had loaded the mix into tank pulled by a tractor. When he turned the pump on the hose blew off from its connection. Spray went under his glasses and into both eyes. He had ocular symptoms and sought medical care and was referred to a specialist. A family member is licensed and Department of Health discussed use of PPE with both family members. Herbicide/algicide: Paraquat dichloride 1 Definite severity: Low/Mild

Case	Exp Date	Incident Description
070177	07/28/2007	A 59-year-old female with a bee allergy was outside helping a friend. They saw bees and she used an older discontinued product to repel them. The wind blew up and her right eye was exposed. She immediately flushed it, took an antihistimine and called WAPC. She went to the ER for further evaluation. Two months later she noticed that her right eye easily feels weak and tired. Insecticide (excluding solely IGR and fumigants): Diethyl O-(3,5,6-trichloro-2-pyridyl) phosphorothioate, O,O-; Allethrin, d- 1 Possible severity: Low/Mild
070179	07/27/2007	A 60-year-old female homeowner was beginning to mix a concentrate of the product when it over flowed onto her hands. She had no reaction at that time, wiped it off, finished mixing and then applied it for 20 minutes to shrubs and a vine. A few hours later her hands and arms were burning. She showered and washed her hair. By the next day she had dermal symptoms over all areas of her arms, legs, feet, neck and face that had not been covered. She sought medical care and was referred by her primary HCP to a specialist. Her symptoms resolved after two weeks. Insecticide (excluding solely IGR and fumigants): Potassium salts of fatty acids 1 Probable severity: Low/Mild
070180	07/29/2007	A 45-year-old female told her health care provider that she developed eye irritation and other symptoms after she had exposure from nearby application while thinning fruit. She sought medical care the same day. According to medical records the HCP requested local sheriff to obtain application information. Department of Health was unable to contact patient for interview. Insecticide (excluding solely IGR and fumigants): Lambda-cyhalothrin 1 Possible severity: Low/Mild
070181	07/28/2007	A 52-year-old male unlicensed applicator employed to drive an air boat used to spray spartina was exposed as wind blew product back in his face. He had ocular, dermal and neurological symptoms. He sought health care at local ER. Herbicide/algicide: Imazapyr, isopropylamine salt, Glyphosate, isopropylamine salt 1 Possible severity: Low/Mild
070184	07/30/2007	A 20-year-old male was spraying his dog when the dog rolled over. The motion redirected the spray to the man's eye. He had ocular symptoms and sought medical care the next day. Other (Includes biological controls, plant growth regulators, antibiotics, etc.): Methoprene, S-; Tetrachlorvinphos 1 Possible severity: Low/Mild
070190	07/17/2007	A 56-year-old male, farm supervisor/mechanic/mixer-loader was moving boxes of chemicals to loading site. He later experienced symptoms. The next day he sought medical care for neurological and dermal symptoms on left arm. He reportedly wore cotton gloves when moving the boxes and no other PPE. Insecticide (excluding solely IGR and fumigants): Azinphos-Methyl 1 Possible severity: Low/Mild
070192	07/07/2007	A 47-year-old male thinning apples and picking cherries in an orchard developed rash on back over 2 day period. Two days after onset he sought health care. Unable to contact employee for follow-up. Herbicide/algicide: Glyphosate, isopropylamine salt, Dimethylamine 2,4-dichlorophenoxyacetate, Chloro-4,6-bis(ethylamino)-s-triazine, 2- 1 Possible severity: Low/Mild

Case	Exp Date	Incident Description
070193	07/18/2007	A 30-year-old male farm worker was using a pressure washer hose to clean the tanks of an air blast sprayer. It was hot and he was sweating, so he put his protective goggles over his head, at which time his right eye was splashed with the spray. He had ocular symptoms which increased over the next 5 days. He sought health care at the ER. Fungicide: Bacillus pumilus strain QST 2808 1 Probable severity: Low/Mild
070195	07/17/2007	A 45-year-old male suckering peaches in an orchard treated with a fungicide 2 hrs earlier developed dermal symptoms. REI on label is 12 hrs. He reported he could smell the pesticide. No other workers reported health effects. The farmworker wore a long-sleeved shirt on a hot day. The farmworker sought medical care two days later when over the counter medications didn't relieve the symptoms. Fungicide: Pyraclostrobin; Boscalid 1 Probable severity: Low/Mild
070196	07/03/2007	A 29-year-old female was packing apples in the field when a sprayer passed by in the next row. She felt moisture droplets on her face and smelled a chemical odor. Within 5 minutes she had gastrointestinal and neurological symptoms. She reports phoning her local clinic on day of exposure and the next, but that she was unable to get an appointment. Her GI symptoms continued and became worse over the next six days. She sought medical care on sixth day at ER. Insecticide (excluding solely IGR and fumigants): Spirodiclofen 1 Possible severity: Low/Mild
070197	07/31/2007	A 62-year-old female wore shorts, a long sleeved shirt, flipflops and no gloves while applying the product. Within 10 minutes she had dermal symptoms. The next day her nylons made it worse and she sought medical care. She said there had been a breeze and she had not read the label. Herbicide/algicide: Triethylamine triclopyr 1 Possible severity: Low/Mild
070198	08/03/2007	A 57-year-old male reported GI and respiratory symptoms one day after his apartment complex was treated with an herbicide. His dog walked on treated lawn and was also ill. Individual had no direct contact with treated landscape but did note a light odor to spray. Recent organ transplant may have made him more susceptible. He sought health care and symptoms resolved in 3 days. Herbicide/algicide: MCPA, dimethylamine salt; Fluroxypyr; Triclopyr 1 Possible severity: Low/Mild
070199	08/07/2007	A 23-year-old male inhaled flea fogger in his home as he repeatedly re-entered treatment area in search of cat. He found cat after about 10 minutes total exposure. He sought health care for difficulty breathing and dizziness. Insecticide (excluding solely IGR and fumigants): Pyrethrins; Piperonyl butoxide; Methoprene, S-; N-octylbicycloheptene dicarboximide 1 Possible severity: Low/Mild
070200	08/05/2007	A 18-year-old male sought medical care after his bed was treated with flea powder by a relative. He reported dermal and respiratory symptoms after sleeping in the treated bed. Respiratory symptoms continued more than one week despite staying elsewhere. Department of Health provided written and verbal assistance in managing flea outbreaks in a home with asthmatics. Insecticide (excluding solely IGR and fumigants): Tetrachlorvinphos 1 Probable severity: Moderate

Case	Exp Date	Incident Description
070201	08/01/2007	A 52-year-old female reported respiratory and ocular symptoms after sleeping with windows open across the street from an 18-acre herbicide application. She reports her residence about 100 feet from nearest point of application. On the 3rd day post application she reported the concern to the Dept. of Ecology. Paramedics were referred to her home by Ecology. Her symptoms subsided at that point. WSDA referred the case to Department of Health, but didn't take samples. Herbicide/algicide: Glyphosate, isopropylamine salt 1 Possible ` severity: Low/Mild
070202	08/08/2007	A 65-year-old female smelled pesticide during her morning walk near an orchard application. She reported onset of mild respiratory and systemic symptoms within 5-10 minutes of exposure. She did not seek health care. Symptoms resolved by end of day. WSDA samples were positive for drift in her yard. Insecticide (excluding solely IGR and fumigants): Azinphos-Methyl 1 Probable severity: Low/Mild
070204	08/08/2007	A 54-year-old female activated bug bombs and one exploded after igniting from being too close to the gas water heater. She called EMS and was treated for respiratory irritation. She refused to go to ER and did not respond to interview request. Insecticide (excluding solely IGR and fumigants): Cypermethrin (ANSI) 1 Probable severity: Low/Mild
070207	07/27/2007	A 42-year-old male applying an herbicide to a vineyard developed ocular symptoms after spray hit his right eye. He wore required PPE, but said wind blew up and he received exposure on right side. He sought medical treatment six days later. Herbicide/algicide: Paraquat dichloride 1 Possible severity: Low/Mild
070211	08/09/2007	A 37-year-old male nursery worker poured a herbicide into a bucket of water to mix. It splashed onto his face and mouth. He swallowed some. He reported dermal, gastrointestinal and neurological symptoms after a few minutes. Symptoms lasted about six hours. He sought health care at the ER. Herbicide/algicide: Glyphosate, isopropylamine salt 1 Probable severity: Low/Mild
070212	08/10/2007	A 22-year-old female entered home unaware a fogger had been activated. She had difficulty breathing and ran outside. She was treated and released in the ER after being transported by ambulance. Insecticide (excluding solely IGR and fumigants): Esfenvalerate; Tetramethrin (ANSI); N-octylbicycloheptene dicarboximide 1 Probable severity: Low/Mild
070215	08/12/2007	A 34-year-old male was working in his yard when he fell in an ant pile that had pyrethroid dust on it. He inhaled some and began having difficulty breathing. He subsequently had an asthma attack and went to the ER. Department of Health was unable to reach patient for interview. Insecticide (excluding solely IGR and fumigants): Permethrin, mixed cis,trans (ANSI) 1 Probable severity: Low/Mild

Case	Exp Date	Incident Description
070216	08/08/2007	A 73-year-old male developed primarily respiratory symptoms with some ocular and neurological involvement after an exposure to an herbicide in a city park. He reported that his dog was also coughing and vomiting after walking through grass still wet with the herbicide. Signs had been posted but the individual did not see them until 5 minutes of walking on wet grass. He sought medical care. WSDA investigated and cited the applicator. Herbicide/algicide: Dimethylamine 2,4-dichlorophenoxyacetate; Dicamba, dimethylamine salt; Dimethylamine 2-(2-methyl-4-chlorophenoxy)propionate 1 Probable severity: Moderate
070218	08/13/2007	A 59-year-old male rubbed eye after applying insect repellent. Irritant symptoms began within 15 minutes. He was camping and not able to rinse out eye for 45 minutes. He sought health care the following day. Symptoms resolved fully in two weeks. The corneal abrasion may have been from a foreign body. Unknown: Diethyl-meta-toluamide and other isomers, N,N- 1 Probable severity: Moderate
070219	08/14/2007	3-year-old female sprayed self in mouth with insecticide. She had difficulty breathing and cried. EMS responded to the scene and the child did not seek further health care. Patient was lost to follow-up. Insecticide (excluding solely IGR and fumigants): Lambda-cyhalothrin 1 Possible severity: Low/Mild
070220	08/11/2007	An aunt put flea collars on 6 kittens on Saturday 8/11/2007. Three-year-old child played with kittens for about 2 hours daily for next three days at home, a single-wide trailer. Child experienced G.I. symptoms and reduced activity beginning on 8/11/2007 evening, that lasted for 4 days. Father removed collars from kittens on 8/14/2007. Mother took child to E. D. on 8/15/2007. Child was treated and released. Mother reports GI symptoms began to resolve after E.D. visit and that she was better next day. Insecticide (excluding solely IGR and fumigants): Propoxur 1 Possible severity: Moderate
070221	08/13/2007	A 43-year-old male, licensed PCO was applying pyrethroid dust to wasp nest in a tree. The 25' tube used to reach the nest popped off a power duster unit on the ground. A cloud of pesticide dust formed and enveloped him for 3-4 minutes. He wore rubber boots, jeans, long sleeved shirt and gloves. He wore no other PPE, nor was PPE required. Neurological and GI symptoms began 2 hours after exposure. That evening, he experienced GE, neurological, and respiratory symptoms. He stayed home from work the following day and sought medical care two days after exposure. His symptoms ended by the evening of the second day, two and a half days after exposure. Insecticide (excluding solely IGR and fumigants): Deltamethrin 1 Possible severity: Low/Mild
070222	07/16/2007	A 22-year-old male construction helper was spraying flies in a chicken ranch with dusty powder chemical. He wasn't wearing any protective equipment, only long pants, shirt, and shoes. He was not licensed and reported that this was not his regular job. While spraying he got soaked with the insecticide reaching his legs, arms, face and neck. He disposed of his clothes and washing off. Later that evening he started feeling sick. His symptoms included burning sensation and itching. He went to see a doctor. The next day his symptoms disappeared. Insecticide and other: Carbaryl (ANSI) 1 Possible severity: Low/Mild
070223	08/16/2007	A 60-year-old male developed respiratory and neurological symptoms after setting off 2 bug bombs in a small storage area in his home. He reported breathing the spray as he backed out of the room. He sought medical care the same day. Insecticide (excluding solely IGR and fumigants): Tralomethrin (ANSI) 1 Probable severity: Low/Mild

Case	Exp Date	Incident Description
070224	08/13/2007	A 55-year-old female was exposed to residual indoor air of home foggers applied in a 2-week span. Her home was 1,000 square feet. She applied an unknown "old" fogger and then a week later she bought and set off 2 foggers labeled for 625 square feet each. Also she inhaled fumes through open window when an exterior insecticide was applied to the home's perimeter. She also applied drops to her dog twice during this time. She had neurological, gastrointestinal, and ocular health effects and described seeking medical care from a hospital. The medical records could not be located. She resorted to sleeping in her car for 2 nights. Insecticide (excluding solely IGR and fumigants): Esfenvalerate, Pyrethrins; Octyl bicycloheptene dicarboximide, N-; Permethrin, mixed cis,trans (ANSI) 1 Possible severity: Low/Mild
070225	08/18/2007	A 5-year-old male was playing with bug repellent when some squirted in his eye. He had ocular symptoms. The fire department responded and he was fine after thoroughly flushing the eye. Insect repellant: Diethyl-meta-toluamide and other isomers, N,N- 1 Probable severity: Low/Mild
070226	08/19/2007	A 90-year-old male was spraying weeds and got it on his leg through his pants. He experienced dermal symptoms and went to ER. Herbicide/algicide: Glyphosate, isopropylamine salt 1 Probable severity: Low/Mild
070228	08/21/2007	A 23-year-old female activated 9 foggers in her 1,000-square-foot. home and developed upper respiratory irritation in the process. That evening, she drank from a glass left out during the fogging and felt dizzy and nauseated. She went to the ER later that evening. Insecticide (excluding solely IGR and fumigants): Pyrethrins; Permethrin, mixed cis,trans (ANSI); N-octylbicycloheptene dicarboximide 1 Possible severity: Low/Mild
070232	08/24/2007	A 51-year-old male was showering when his son activated 2-3 foggers in the home, unaware his father was inside. Patient first felt nauseated and experienced shortness of breath upon getting out of shower. He shouted for others and they helped him outside. EMS assisted him onsite, including oxygen administration and he improved. He was seen at the hospital and released. Insecticide (excluding solely IGR and fumigants): Cypermethrin (ANSI) 1 Probable severity: Moderate
070234	08/27/2007	A 61-year-old male set off one bug bomb in his small (16x7x6) travel trailer and went outside to catch a ride. The ride did not stop and he went back inside to pick up his cell phone. He had respiratory, neurological and ocular symptoms and sought medical care immediately. Insecticide (excluding solely IGR and fumigants): Pyrethrins; Piperonyl butoxide; Methoprene, S-; N-octylbicycloheptene dicarboximide 1 Possible severity: Low/Mild
070236	08/22/2007	A 72-year-old male wore some PPE when he applied 2 herbicides in his yard. There was no wind. He developed dizziness and felt like he was getting sick and went to his health care provider3 times over the next 6 days. He didn't mention herbicide use until the 6th day. Herbicide/algicide: Glyphosate, isopropylamine salt Unknown: 2,4-dichlorophenoxyacetic acid 1 Possible severity: Low/Mild

Case	Exp Date	Incident Description
070237	08/29/2007	A 73-year-old male sprayed herbicide to weeds in yard without safety goggles and was surprised by pain and irritation when wind blew it in his eyes. He went to ER of ocular symptoms. Herbicide/algicide: Oxyfluorfen (ANSI); Imazapyr, isopropylamine salt 1 Definite severity: Low/Mild
070238	08/30/2007	A 32-year-old male greens keeper at a golf course had brief eye exposure to mist from sprayer when unexpected gust of wind arose. He was about 10 yards from the sprayer and wearing full PPE except eye protection. He irrigated his eyes on site and sought medical care. His ocular symptoms resolved in 3 days. Fungicide: Chlorothalonil (ANSI), Thiophanate-methyl (ANSI) 1 Definite severity: Low/Mild
070239	08/28/2007	A 29-year-old female, two daughters and husband developed upper respiratory irritation upon re-entry to home that was fogged 24 hours prior. Five foggers were activated throughout the 11,000 cubic foot home. The five y/o gasped for air the first night. She and her mother went to the ER. Two other family members had UR irritation. Insecticide was also applied outside of home the same day as foggers activated. No known exposure to outdoor structural application. Insecticide (excluding solely IGR and fumigants): Permethrin, mixed cis,trans (ANSI); Tetramethrin (ANSI), Tralomethrin (ANSI) 4 Possible severity: (4) Low/Mild
070244	09/09/2007	A 21-year-old female, 20 weeks pregnant, applied flea spray to cat and two hours later developed gastrointestinal symptoms. She went to the ER and her health effects subsided. Other (Includes biological controls, plant growth regulators, antibiotics, etc.): Methoprene, S-; Tetrachlorvinphos 1 Possible severity: Low/Mild
070246	09/11/2007	A 23-year-old male was pulling treated wood at a mill when a sliver punctured his right index finger. He washed off the area with water and covered with a bandage. Symptoms after exposure were mostly dermal around wound site. He sought medical attention, and returned for two follow-up visits. Fungicide: Iodo-2-propynyl butylcarbamate, 3-, Propiconazole 1 Possible severity: Low/Mild
070249	09/17/2007	A 57-year-old female farmer threw a handful of gopher bait (dusty substance, last of pellets) in a flowerbed for rodent control. The residence is on the farm. The wind blew the dust back to her and she inhaled some of it. One-half hour later she developed neurological and cardiac symptoms. She didn't feel able to drive herself to health care, so she rested and saw physician later that day, at which time she was better. Rodenticide: Strychnine 1 Possible severity: Low/Mild
070251	09/17/2007	A 10-year-old female drank water from cup that sat on counter where patent sprayed insecticide for gnats. The water tasted bad and produced a burning sensation in her mouth. Later that evening the child had a headache and felt tingling in limbs. She went to the ER and symptoms subsided. Insecticide and other: Pyrethrins; Piperonyl butoxide; Permethrin, mixed cis,trans (ANSI) 1 Possible severity: Low/Mild

Case	Exp Date	Incident Description
070254	08/01/2007	A 48-year-old male restaurant employee worked in area that was apparently sprayed repeatedly with a clove oil pesticide. He understood the smell to be coming from a floor cleaner and did nothing to avoid exposure. He developed dermal and neurological sx as well as a fever during the month of exposure. He also had a 2 separate exposures to an ingredient of the pesticide, eugenol, at a dental clinic. He had sx after only one of the dental clinic visits. Blood tests consistent with allergic reaction. Sx resolved when he quit work. Insecticide (excluding solely IGR and fumigants): 1 Possible severity: Low/Mild
070258	09/25/2007	A 40-year-old male sprayed insecticide to the exterior of his home. The spray ricocheted off the gaps between siding and got in his eye. The label had no PPE requirements, but patient will use goggles in the future. He went to the ER with bright re eyes and burning sensation. Insecticide (excluding solely IGR and fumigants): Lambda-cyhalothrin 1 Definite severity: Low/Mild
070260	08/24/2007	A 24-year-old female office receptionist experienced ocular and respiratory symptoms 15 minutes after smelling an application to the building's perimeter for ants. The worker was taken to the ER and symptoms resolved within a couple of hours. Insecticide (excluding solely IGR and fumigants): Imidacloprid 1 Possible severity: Low/Mild
070262	09/10/2007	A 17-year-old male shampooed his dog in the bathtub 3-4 times in one month without benefit of gloves. He was wet after each application and developed dermal symptoms. His mother called WAPC. He did not seek other health care. He missed 1-2 days of school. Insecticide (excluding solely IGR and fumigants): Piperonyl butoxide; Permethrin, mixed cis,trans (ANSI); Pyriproxyfen 1 Possible severity: Low/Mild
070263	09/28/2007	A 35-year-old female had ocular exposure with mild temporary symptoms to flea control product. As she opened the container it was pointed towards her face and a drop "flew" into her eye. She irrigated her eye and then sought medical care shortly after. Multiple (product is classified as multiple classes …): Methoprene, S-; Fipronil 1 Probable severity: Low/Mild
070264	09/29/2007	A 2-year-old female developed ocular exposure and symptoms after lice shampoo was use on her hair and entered her eyes during the rinse process. The eyes were irrigated by parents. When she awoke the next morning symptoms had worsened and child was taken to the ER for medical care. Unknown: Piperonyl butoxide, Pyrethrins 1 Definite severity: Moderate
070265	10/02/2007	A 48-year-old female apparently did not wash her hands well after spraying an insecticide at home. She rubbed her eyes and experienced burning or stinging sensation. Next day her eye was red and tearing, and had a lot of pain. She sought medical care and was treated. Insecticide (excluding solely IGR and fumigants): pyrethrin 1 Probable severity: Low/Mild

Case	Exp Date	Incident Description
070267	09/01/2007	A 29-year-old male agricultural worker reported dermal symptoms while picking apples. Sx progressed to systemic sx over several days as he continued to pick. He sought health care 5 days after sx onset. Tank mix of insecticide and calcium chloride had been applied 2-3 days before sx. Discrepancy in employer's records prevented confirmation of exposure and determination about whether REI (3 day) has been satisfied. No one else on crew of six reported sx. Calcium product may have contributed to dermal sx. Insecticide (excluding solely IGR and fumigants): Phosmet 1 Possible severity: Low/Mild
070269	09/14/2007	A 27-year-old fire fighter gained access to a home at 9:30 AM through a small window following an alarm. He did not see smoke and took off his breathing apparatus. The house was 1680 square feet or 12,040 cubic feet. One aerosol is recommended for 6,000 cubic feet. About 6-8 cans were seen in the basement and 5-7 cans upstairs fo a total of 11-15 bombs. The fireman was ambulanced to ER with respiratory, neurological, gastrointestinal and ocular symptoms. The releases were made by the resident just after 9 a.m. Insecticide (excluding solely IGR and fumigants): Permethrin, mixed cis,trans (ANSI); Tetramethrin (ANSI) 1 Probable severity: Low/Mild
070272	09/28/2007	A 85-year-old female was cleaning out her home sprayer from previous year use. There was about 1/2 cup of product left in sprayer. When she sprayed her hose into the sprayer the product splashed back into her eye. She had ocular symptoms and sought medical care. She was not wearing eye protection as required by the label. Unknown: Triclopyr 1 Probable severity: Low/Mild
070273	10/10/2007	A 35-year-old female drank water from a glass that was located in the target spray area. She developed tingling on her tongue and difficulty breathing. She went to the ER. The landlord applied the wasp spray indoors; inconsistent with the label's instruction to never spray indoors or on dishes. Insecticide (excluding solely IGR and fumigants): Piperonyl butoxide; Permethrin, mixed cis,trans (ANSI); Tetramethrin (ANSI) 1 Possible severity: Low/Mild
070275	10/13/2007	A 43-year-old female reported respiratory and systemic symptoms whole vacuuming after flea product used in home. EMT's responded and patient recovered with fresh air. She refused further medical care. Insecticide and other: Tetramethrin (ANSI); Phenothrin, D-; Pyriproxyfen 1 Possible severity: Low/Mild
070278	10/15/2007	A 54-year-old male walked from his car to his home. He smelled pesticide and saw his neighbor spraying herbicide with a tractor and boom about 400 feet away. As an asthmatic he was concerned for himself and family. WSDA was contacted and provided pesticide information on what was sprayed, but did not investigate as resident wanted to communicate with applicator. Resident developed upper respiratory irritation, but did not seek medical care. Unknown: 2,4-dichlorophenoxyacetic acid, Dicamba, dimethylamine salt, Aminopyralid triisopropanolamine salt 1 Possible severity: Low/Mild
070279	10/05/2007	A 27-year-old male applying to pears experienced exposure to his neck when wind blew spray back on to him. He developed dermal symptoms and sought medical care 3 days later. Insecticide (excluding solely IGR and fumigants): Mineral oil - includes paraffin oil from 063503 Insecticide and fungicide (1 and 4): Calcium polysulfide 1 Definite severity: Low/Mild

Case	Exp Date	Incident Description
070281	10/22/2007	A 54-year-old female applied shampoo to her hair for lice control and covered hair with plastic cap for the required 10 minutes. Some shampoo dropped in her eye and she wiped with a towel and rinsed. She experienced some pain. In the morning, her eye was swollen and pain was worse. She went to the hospital. She did not cover her eyes with towel as recommended on the label as she was alone making the application. Unknown: Piperonyl butoxide, Pyrethrins 1 Probable severity: Low/Mild
070285	10/30/2007	A 40-year-old female reported ocular symptoms after lice shampoo dripped in eye during treatment of her own scalp. She sought medical care and symptoms resolved. Educational materials provided by Department of Health. Unknown: Pyrethrins, Piperonyl butoxide 1 Definite severity: Low/Mild
070286	09/03/2007	A 74-year-old male hops applicator developed dermal symptoms after sitting on tractor seat where he unknowingly spilled a corrosive fungicide. About 3 hours later he developed dermal burning sensation but didn't report it till he finished working. He did not seek medical care until one week later when the condition worsened. He was off work for one week. Other (Includes biological controls, plant growth regulators, antibiotics, etc.): Hydrogen peroxide 1 Definite severity: Moderate
070288	10/02/2007	A 42-year-old male licensed applicator was spraying in a wetland mitigation area and he developed ocular symptoms. He was conducting a hack and a squirt and accidently discharged the trigger pump sprayer and had an ocular exposure. He was wearing safety glasses. He sought medical care, was referred to an ophthalmologist and treated for exposure to both eyes. Herbicide/algicide: Butoxyethyl triclopyr 1 Probable severity: Low/Mild
070289	10/17/2007	A 24-year-old male sprayed Christmas trees and 24 hours later began assisting in their harvest and shipping. He experienced systemic, dermal and ocular symptoms. He sought health care two days later. No other co-workers experienced any symptoms. Management observed the symptoms. He wore rain gear, carried the trees on his shoulder and put his face against them. Insecticide (excluding solely IGR and fumigants): Endosulfan (ANSI) 1 Probable severity: Moderate
070290	11/02/2007	A 53-year-old male reached above himself for a container. In doing so, he pulled down another plastic pesticide container with a hole in its side created by rodents. Upon grabbing the pesticide he was squirted in the eye, face and hair. He rinsed immediately and sought health care. Insecticide (excluding solely IGR and fumigants): Malathion (ANSI) 1 Definite severity: Low/Mild
070291	11/07/2007	A 1.5-year-old female got into flea shampoo for cats at her babysitter's home. Her mother noticed that she had altered behavior and wouldn't open eyes, which were swollen and red. Mother rinsed eyes and brought product to ER, where toddler was diagnosed with bilateral corneal abrasions. Upon discharge, she returned to her pre-exposure behavior. Follow-up interview was unsuccessful. Insecticide (excluding solely IGR and fumigants): Pyrethrins; Piperonyl butoxide 1 Probable severity: Moderate

Case	Exp Date	Incident Description
070292	11/18/2007	A 19-year-old female activated foggers in each of the 4 rooms (including bathroom) of her apartment. She returned 4 hours later and entered to open windows. She went outside after 3-minute exposure, dizzy and unable to breathe. She vomited. She returned to sleep several hours later with her daughter. She awoke the following morning and the side of her face was numb. She hadn't stored her pillow during fogging. Her daughter was fine. She went to the ER. Insecticide (excluding solely IGR and fumigants): Cypermethrin (ANSI) 1 Possible severity: Low/Mild
070293	11/19/2007	A 20-year-old female drank water from a glass that remained uncovered during fogging less than three hours prior. She developed gastrointestinal symptoms and went to the ER. She improved afterward. Insecticide (excluding solely IGR and fumigants): Permethrin, mixed cis,trans (ANSI); Tetramethrin (ANSI) 1 Possible severity: Low/Mild
070295	12/03/2007	A 21-year-old mother sprayed an aerosol upwards at walls and ceiling in her apartment to kill ants. The product leaked from the nozzle when she pointed it upwards. Some of the liquid dripped on her clothes and into her mouth. She had respiratory sx and then GI and ocular sx. When her infant in the next room started crying, the mother went and picked her up without changing clothes or washing. They returned to the sprayed room and the child vomited, was having trouble breathing and had red eyes. Both went to the ER for medical assessment. Insecticide (excluding solely IGR and fumigants): Pyrethroid 2 Possible severity: (2) Low/Mild
070296	10/19/2007	A 74-year-old female homeowner spread a large box of mothballs over the floors and furniture in her living room and spare bedroom to deter rats. Product remained in rooms for 1 1/2 months. Her 10-year-old grandson and her 51-year-old daughter who visited often experienced numerous symptoms they thought related to mothballs. Homeowner had no reported symptoms. Homeowner not contacted at request of daughter. Unknown: Naphthalene 2 Possible severity: Low/Mild severity: Moderate
070297	12/19/2007	An 18-month-old male sprayed his face with flea product for dogs. Product was accessible because parent in the process of moving. Redness on face developed, but had cleared at time of ER visit. Insecticide (excluding solely IGR and fumigants): Permethrin, mixed cis,trans (ANSI); Methoprene, S- 1 Possible severity: Low/Mild
070298	08/22/2007	A 34-year-old male at a mushroom production facility applied a fungicide and algaecide with water to mushrooms. His boots had a cut in them allowing chemically treated water to enter and expose his feet. He developed dermal symptoms. He notified management and sought health care at a clinic. The boots were replaced the following day. Disinfectant/broad spectrum for water sanitation: Calcium hypochlorite Fungicide: Thiabendazole 1 Possible severity: Low/Mild
070299	12/21/2007	A 30-year-old female who had asthma applied a mixture of dog shampoo and flea shampoo to her cats and a dog. Subsequently she had neurological, gastrointestinal and respiratory symptoms. She was treated at an ER and released. Multiple unsuccessful efforts were made to contact the individual. Insecticide (excluding solely IGR and fumigants): Piperonyl butoxide; Permethrin, mixed cis,trans (ANSI) 1 Possible severity: Low/Mild

Case	Exp Date	Incident Description
070301	12/29/2007	A newborn female slept 5-7 hours on a shirt that was manufactured with insect repellent. The shirt had been washed 5 times and the insect repellent stays active up to 25 washings. The baby did not awake for regular feeding as previously at 2 hr. intervals. Baby was listless, so mother gave sponge bath. After bath, baby was clothed on T-shirt. She immediately developed a rash and was taken to ER. The shirt was discarded and the baby is thriving. Label provides no exposure restrictions to any population. No other pesticide surveillance states report illnesses associated with this type of clothing. Insect repellant: Permethrin, mixed cis,trans (ANSI) 1 Probable severity: Low/Mild
080007	12/06/2007	A 27-year-old office worker experienced respiratory symptoms after areas of her office were sprayed with a disinfectant product to kill mold. She reports that she entered work after lunch and noticed product had been sprayed on walls and floors in kitchen, bathroom and around her desk area near trash cans. She noticed respiratory symptoms began 5 minutes later, but continued working at her desk through the day. After work she felt neurological symptom. She sought health care at ER after returning to work the next day and feeling overcome by the odor and respiratory symptoms. She was treated for "inhalation injury" at the ER and lost 3 days of work. She reports that symptoms resolved after about a week. Disinfectant/broad spectrum for water sanitation: Didecyl dimethyl ammonium chloride; Chlorine dioxide 1 Possible severity: Low/Mild

End of report

Washington State Department of Health
Summary of 2007 Children's Definite, Probable, and Possible Exposures

Age in Years	Incident Description
0.1	A newborn female slept five to seven hours on a shirt that was manufactured with insect repellent. The shirt had been washed five times and the insect repellent stays active up to 25 washings. The baby did not awake for regular feeding as previously at two hour intervals. The baby was listless, so mother gave sponge bath. After bath, baby was clothed on t-shirt. She immediately developed a rash and was taken to ER. The shirt was discarded and the baby is thriving. Label provides no exposure restrictions to any population. No other pesticide surveillance states report illnesses associated with this type of clothing. Insect repellant: Permethrin, mixed cis,trans (ANSI) 1 Probable severity: Low/Mild
0.7	A 21-year-old mother sprayed an aerosol upwards at walls and ceiling in her apartment to kill ants. The product leaked from the nozzle when she pointed it upwards. Some of the liquid dripped on her clothes and into her mouth. She had respiratory symptoms and then gastrointestinal and ocular symptoms. When her infant in the next room started crying, the mother went and picked her up without changing clothes or washing. They returned to the sprayed room and the child vomited, was having trouble breathing and had red eyes. Both went to the ER for medical assessment. Insecticide (excluding solely IGR and fumigants): Pyrethroid 2 Possible severity:(2) Low/Mild
1	A 12 m/o female was taken to the ER after she had eaten sticky material off an ant killer product found in the home. Patient's mom reported mild gastrointestinal symptoms. Insecticide (excluding solely IGR and fumigants): Borax (B4Na2O7.10H2O) (1303-96-4) 1 Possible severity: Low/Mild
1.5	A 1.5-year-old male swallowed veterinary ear mite medication and had gastrointestinal symptoms. He was taken to the ER soon after the ingestion. Agency staff was not able to contact the parents of the child to determine how child obtained product. However, the medical record indicates that the health provider informed family regarding better child proofing at home. Other: Pyrethrin 1 Possible severity: Low/Mild
1.5	An 18 month old male sprayed his face with flea product for dogs. Product was accessible because parent in the process of moving. Redness on face developed, but had cleared at time of ER visit. Insecticide (excluding solely IGR and fumigants): Permethrin, mixed cis,trans (ANSI); Methoprene, S- 1 Possible severity: Low/Mild
1.5	A 1.5-year-old female got into flea shampoo for cats at her babysitter's home. Her mother noticed that she had altered behavior and wouldn't open eyes, which were swollen and red. Mother rinsed eyes and brought product to ER, where toddler was diagnosed with bilateral corneal abrasions. Upon discharge, she returned to her pre-exposure behavior. Follow-up interview was unsuccessful. Insecticide (excluding solely IGR and fumigants): Pyrethrins; Piperonyl butoxide 1 Probable severity: Moderate
1.8	A 22 m/o boy grabbed a Ready-To-Use lawn herbicide container while playing and sprayed himself in the face. Child had some respiratory health effects and was taken to the ER. Herbicide/algicide: Dicamba, dimethylamine salt; Mecoprop-P; 2,4-D, Dimethylamine Salt

Age in Years	Incident Description
	1 Possible severity: Low/Mild
2	A 2-year-old female developed ocular exposure and symptoms after lice shampoo was use on her hair and entered her eyes during the rinse process. The eyes were irrigated by parents. When she awoke the next morning symptoms had worsened and child was taken to the ER for medical care. Unknown: Piperonyl butoxide, Pyrethrins 1 Definite severity: Moderate
3	An aunt put flea collars on 6 kittens on Saturday 8/11/2007. Three-year-old child played with kittens for about 2 hours daily for next three days at home, a single-wide trailer. Child experienced G.I. symptoms and reduced activity beginning on 8/11/2007 evening that lasted for 4 days. Father removed collars from kittens on 8/14/2007. Mother took child to E. D. on 8/15/2007. Child was treated and released. Mother reports GI symptoms began to resolve after E.D. visit and that she was better next day. Insecticide (excluding solely IGR and fumigants): Propoxur 1 Possible severity: Moderate
3	A 3-year-old female played for about two hours in the dirt and weeds of her mother's garden, one hour after an herbicide had been applied in the garden. It is not known whether or not the product had dried prior to exposure. Mother noticed daughter had red, irritated skin on her face before bed that evening, approximately 4 hours after exposure. The next morning mother called WAPC since dermal symptoms had worsened. Parents took child to doctor four days after exposure. Rash resolved after about two weeks. Herbicide/algicide: Dicamba, dimethylamine salt; Diquat dibromide; Fluazifop-P-butyl 1 Definite severity: Low/Mild
3	3-year-old female sprayed self in mouth with insecticide. She had difficulty breathing and cried. EMS responded to the scene and the child did not seek further health care. Patient was lost to follow-up. Insecticide (excluding solely IGR and fumigants): Lambda-cyhalothrin 1 Possible severity: Low/Mild
3.5	A 3-year-old male was alone in the garage and may have ingested a dilute mixture of diquat and two other active ingredients. He had gastrointestinal symptoms that evening and was taken to the ER. Another child commented "you stink." After leaving the ER he began to vomit again and was taken to his family doctor the next day. Provider evaluated as possible viral illness but no one else in family became ill. Herbicide/algicide: Dicamba, dimethylamine salt; Diquat dibromide; Fluazifop-P-butyl 1 Probable severity: Moderate
4	A 27-year-old mother and her 4 and 6-year-old daughters were exposed to an accidental release of fogger by the 4-year-old child. The mother entered the room to take her out. The older child was with her. They all had respiratory symptoms and one of the girls had a history of asthma. EMTs were called and they were transported to the hospital. Insecticide (excluding solely IGR and fumigants): Cypermethrin (ANSI) 3 Possible severity: (3) Low/Mild
4	A 4-year-old female found an insecticide fogger in the bathroom while the family was in the process of moving. The fogger activated in her face and she sprayed it on her arm like perfume, she reported to parents. She was taken outside for fresh air and EMT responded. Her face was red and she coughed and vomited immediately following exposure. Her health improved throughout the day; however her mother vomited and developed fever 15 hours later. The following day, the child's arm was very chapped and cracked. Insecticide (excluding solely IGR and fumigants): Cypermethrin (ANSI)

Age in Years	Incident Description
	2 Possible severity: (2) Low/Mild 1 Insufficient Information severity: Low/Mild
4	A 4-year-old boy walked barefoot around the apartment complex where insecticide dust had been applied earlier in the day. That evening, his aunt noticed that his feet had a powdery substance on them and that there were dermal symptoms on both feet. She bathed him and put him to bed. The next morning symptoms worsened and he was taken to the ER. Dermal symptoms lasted for 3.5 days. Insecticide (excluding solely IGR and fumigants): Permethrin, mixed cis,trans (ANSI) 1 Probable severity: Low/Mild
4	A 4-year-old female apparently was playing with other children and had the container of insect repellent. Spray contacted her eyes and she was taken to the ER. Phone for parents of child was disconnected and so an interview was not completed. Repellent: Unknown 1 Possible severity: Low/Mild
4.8	A 37-year-old and 4/yo daughter were exposed to pesticide fumes in their car when pesticide container fell over and ruptured under the back seat. Child was in car seat in the back seat. Child is asthmatic and began coughing within two minutes of exposure. Mother remained asymptomatic. Child taken to doctor 2 days later for continuing respiratory symptoms. Fungicide: Clarified hydrophobic Extract of Neem Oil 1 Definite severity: Moderate
5	A 29-year-old female, two daughters and husband developed upper respiratory irritation upon re-entry to home that was fogged 24 hours prior. Five foggers were activated throughout the 11,000 cubic foot home. The five-year-old gasped for air the first night. She and her mother went to the ER. Two other family members had UR irritation. Insecticide was also applied outside of home the same day as foggers activated. No known exposure to outdoor structural application. Insecticide (excluding solely IGR and fumigants): Permethrin, mixed cis,trans (ANSI); Tetramethrin (ANSI), Tralomethrin (ANSI) 4 Possible severity: (4) Low/Mild
5	A 5-year-old male was playing with bug repellent when some squirted in his eye. Had ocular symptoms. The fire department responded and he was fine after thoroughly flushing the eye. Insect repellant: Diethyl-meta-toluamide and other isomers, N,N- 1 Probable severity: Low/Mild
6	A 27-year-old mother and her 4 and 6-year-old daughters were exposed to an accidental release of fogger by the 4-year-old child. The mother entered the room to take her out. The older child was with her. They all had respiratory symptoms and one of the girls had a history of asthma. EMTs were called and they were transported to the hospital. Insecticide (excluding solely IGR and fumigants): Cypermethrin (ANSI) 3 Possible severity: (3) Low/Mild
9	A 9-year-old male hugged his dog immediately after the dog's flea dip and drop application. He developed pain and swelling on his face including eyes. He went to the ER. He has history of asthma and allergies, including similar symptoms when handling mice and rats. Insecticide (excluding solely IGR and fumigants): Piperonyl butoxide; Permethrin, mixed cis,trans (ANSI) 1 definite

Age in Years	Incident Description
	severity: Low/Mild
9	A 29-year-old female, two daughters and husband developed upper respiratory irritation upon re-entry to home that was fogged 24 hours prior. Five foggers were activated throughout the 11,000 cubic foot home. The five-year-old gasped for air the first night. She and her mother went to the ER. Two other family members had UR irritation. Insecticide was also applied outside of home the same day as foggers activated. No known exposure to outdoor structural application. Insecticide (excluding solely IGR and fumigants): Permethrin, mixed cis,trans (ANSI); Tetramethrin (ANSI), Tralomethrin (ANSI) 4 Possible severity: (4) Low/Mild
9	A 9-year-old male went to sleep with application of scabies cream applied by mother per instructions. He awoke 12-14 hours later, the following morning with facial paresthesia. After showering the numbness persisted and the child presented at ER with chest pain and bradycardia. Unknown: Permethrin, mixed cis,trans (ANSI) 1 Probable severity:Low/Mild
10	A 10-year-old female drank water from cup that sat on counter where patent sprayed insecticide for gnats. The water tasted bad and produced a burning sensation in her mouth. Later that evening the child had a headache and felt tingling in limbs. She went to the ER and symptoms subsided. Insecticide and other: Pyrethrins; Piperonyl butoxide; Permethrin, mixed cis,trans (ANSI) 1 Possible severity: Low/Mild
10	A 74-year-old female homeowner spread a large box of moth balls over the floors and furniture in her living room and spare bedroom to deter rats. Product remained in rooms for 1 1/2 months. Her 10-year-old grandson and her 51-year-old daughter who visited often experienced numerous symptoms they thought related to moth balls. Homeowner had no reported symptoms. Homeowner not contacted at request of daughter. Unknown: Naphthalene 2 Possible severity: Low/Mild severity: Moderate
12	Twenty-one campers ages 5-61 (4 families) reported some or no health effects on different dates over a 2-week span after applications were made at the resort. A licensed PCO drove through the resort, fogging 3 times around midnight over a 5-day period. The campers were in tents or campers in 4 adjacent campsites during the applications. The tents were as close as 15 feet to the road. Six of the 21 sought medical care. Ten reported fevers and primarily GI and respiratory health effects. A resort employee reported having the "stomach flu." WSDA investigated and a Notice of Correction was issued relevant to the spray records. Three of the campers were asymptomatic. Insecticide (excluding solely IGR and fumigants): Malathion (ANSI) 4 Possible severity: (4) Low/Mild 13 Unlikely severity: 1 Insufficient Information severity:
15	A 15-year-old male accidentally took one swallow of a herbicide from a pop can. Shortly after he experienced systemic symptoms. He sought medical care. The product had been brought home by a family member who was a licensed applicator. Herbicide/algicide: Dimethylamine 2,4-dichlorophenoxyacetate 1 Possible severity: Low/Mild
16	Twenty-one campers ages 5-61 (4 families) reported some or no health effects on different dates over a 2-

Age in Years	Incident Description
	week span after applications were made at the resort. A licensed PCO drove through the resort, fogging 3 times around midnight over a 5-day period. The campers were in tents or campers in 4 adjacent campsites during the applications. The tents were as close as 15 feet to the road. Six of the 21 sought medical care. Ten reported fevers and primarily GI and respiratory health effects. A resort employee reported having the "stomach flu." WSDA investigated and a Notice of Correction was issued relevant to the spray records. Three of the campers were asymptomatic. Insecticide (excluding solely IGR and fumigants): Malathion (ANSI) 4 Possible severity: (4) Low/Mild 13 Unlikely severity: 1 Insufficient Information severity:
16	A 16-year-old male mistook flea drops for contact lens solution and applied it to his right eye. He had immediate symptoms. He rinsed his eyes and was taken to the ER. Symptoms resolved with medication in about two days. Insecticide (excluding solely IGR and fumigants): Phenothrin, D- 1 Probable severity: Low/Mild
17	A 17-year-old male shampooed his dog in the bathtub 3-4 times in one month without benefit of gloves. He was wet after each application and developed dermal symptoms. His mother called WAPC. He did not seek other health care. He missed 1-2 days of school. Insecticide (excluding solely IGR and fumigants): Piperonyl butoxide; Permethrin, mixed cis,trans (ANSI); Pyriproxyfen 1 Possible severity: Low/Mild
17	A 17-year-old female applied flea spray to her three dogs. She alternated between dogs, spraying for a few seconds to a minute, then rubbing it into the fur. After 45 minutes she had neurological, GI and respiratory symptoms. She did not wear label required gloves. She was taken to the Urgent Care Clinic, observed and released. Symptoms lasted a total of about three hours. Insecticide (excluding solely IGR and fumigants): Fipronil 1 Possible severity: Low/Mild

Washington State Department of Labor and Industries - Summary of Pesticide Inspections, 2007

City, County Inspection # region	Pesticides Involved	#of Employees	How exposed	Other agencies involved	Incident date	Compliant date	Inspection date (opened) (closed)	Citations/costs	Type of inspection	Type of Business
Royal City 310299474 Grant County	Azinphos methyl	4					8/29/2006 2/12/2007	**Willful:** Employer did not prevent employees from entering a treated area: $10,500.00 **Serious:** Employer did not provide notification to employee of treated areas: $1,250.00 Pesticide information was not displayed in central areas: $0.00 Lack of training concerning WPS: $1,050.00 Training not presented in a language understood by the employee: $1,050.00 Damaged PPE was not repaired or discard: $2,500.00 Decontamination supplies were not available at the mixing site:	Referral	Deciduous tree fruit Orchard

City, County Inspection # region	Pesticides Involved	#of Employees	How exposed	Other agencies involved	Incident date	Compliant date	Inspection date (opened) (closed)	Citations/costs	Type of inspection	Type of Business
								$750.00 No portable or plumbed eyewash: $750.00 No effective Haz Com Program: $150.00 **Total Assessed Penalties $18,000.00**		
Bingen Klickitat County 311278493	Alachlor 4 EC Asana Xl Basagram Botran 75 W Bravo weather Stik Buctril Carbaryl 4L Chlorpyrifos 4e Crossbow Flint Gamoxone Lorsban	20	Apply pesticides				8/8/2007 9/26/2007	**Serious Citation** No plumbed or portable eyewash $150.00 No eyewash $0.00 **General Citation:** No medical exam for respirators:$0.00 No fit testing of respirators:$0.00 No written respiratory protection program:$0.00 The employer did not require employees to adequate eye protection when spraying pesticides:$0.00	Referral	Field Crops Fruit and Vegetables

City, County Inspection # region	Pesticides Involved	#of Employees	How exposed	Other agencies involved	Incident date	Compliant date	Inspection date (opened) (closed)	Citations/costs	Type of inspection	Type of Business
								Total Assessed Penalties $150.00		
Wapato Yakima County 311115216	Gramison Other Pesticides	13	Mixing and handling				6/26/2007 6/26/2007	**Serious Citation:** No Emergency eyewash $100.00 **General Citation:** No chemical list $0.00 No MSDS **Total Assessed Penalties $100.00**	Planned	Deciduous tree fruit orchards
Wenatchee Chelan County 311531461	Lime Sulfur	13	Transfer-ring chemicals from 5,500 gal tank to 250 gal tanks				12/27/2007 12/27/2007	**Serious Citation** No emergency eyewash $300.00 **General Citation** No written respirator program for voluntary respirator use:$0.00 **Total Assessed Penalties $300.00**	Planned	Farm Supply Distributor
Wenatchee Chelan County 311114276	Methyl Bromide	185	Sorting fruit				6/26/2007 7/27/2007	**Serious Citation:** No Accident prevention program $1,200.00	Referral	Fruit packing

City, County Inspection # region	Pesticides Involved	#of Employees	How exposed	Other agencies involved	Incident date	Compliant date	Inspection date (opened) (closed)	Citations/costs	Type of inspection	Type of Business
								Total Assessed Penalties $1,200.00		
Wenatchee Chelan County 311176341	Pesticides	20	Mixing and handling				7/12/2007 7/13/2007	**Serious Citation:** No plumbed or portable emergency eyewash: $100.00 **Penalties Assessed $100.00**	Planned	Deciduous tree fruit orchards
Blaine Whatcom County 310977772	Round up	27	Applying pesticides				5/7/2007 6/8/2007	**Serious Citation:** No Emergency eyewash $300.00 No accident prevention program $240.00 **General Citation:** No written hazard communication program $0.00 No training on how to use chemicals $0.00 No Material Safety Data Sheets $0.00 No chemical inventory $0.00 No PPE assessment $0.00 No written respirator program $0.00	Planned	Hotel, lodging

City, County Inspection # region	Pesticides Involved	#of Employees	How exposed	Other agencies involved	Incident date	Compliant date	Inspection date (opened) (closed)	Citations/costs	Type of inspection	Type of Business
								No medical evaluations for respirator user $0.00 No information for voluntarily use of respirators $0.00 Respirators no stored properly $0.00 Respirator not kept in clean and sanitary condition $0.00 **Total Assessed Penalties $540.00**		
Spokane Spokane County 311111439	Banrot Orthene	25	Mixing pesticides				7/10/2007 8/25/2007	**Serious Citation:** Employees not wearing the appropriate PPE $600.00 No training $600.00 **General Citation:** No walk around safety inspection of active job site $0.00 No attendance record for safety meetings $0.00 No written	Planned	Greenhouse Nursery

City, County Inspection # region	Pesticides Involved	#of Employees	How exposed	Other agencies involved	Incident date	Compliant date	Inspection date (opened) (closed)	Citations/costs	Type of inspection	Type of Business
								respiratory program $0.00 No medical evaluation for respirator use $0.00 No fit testing of respirator $0.00 No training for respirator users $0.00 **Total Assessed Penalties $1,200.00**		
Othello 311278071 Adams County	Lorsban Sevin	20					8/29/2007 9/14/2007	**Serious:** No Haz Com program: $150.00 Respirators were not stored correctly: $120.00 **General:** Employer did not provide adequate information about pesticide application: $0.00 No training on pesticides: $0.00 No chemical inventory: $0.00 No written respiratory program :$0.00	Referral	Deciduous tree fruit Orchard

City, County Inspection # region	Pesticides Involved	#of Employees	How exposed	Other agencies involved	Incident date	Compliant date	Inspection date (opened) (closed)	Citations/costs	Type of inspection	Type of Business
								No effective respirator program: $0.00 No medical evaluation for respirator users: $0.00 No fit testing of respirators: $0.00 **Total Assessed Penalties $270.00**		
Pasco 311301337 Franklin County	Mocap Firestorm Eptam 7-E	9	Spraying fields				8/30/2007 10/8/2007	**Serious:** Employer did not provide respirators for applicators: $500.00 No written respirator program: $0.00 No annual respirator fit testing: $300.00 No training on hazardous chemicals: $500.00 **General:** No medical evaluation for respirator users: $0.00 No MSDSs: $0.00 No chemical	Referral	Vegetables

City, County Inspection # region	Pesticides Involved	#of Employees	How exposed	Other agencies involved	Incident date	Compliant date	Inspection date (opened) (closed)	Citations/costs	Type of inspection	Type of Business
								inventory: $0.00 **Total Assessed Penalties $1,300.00**		
Naches 311378681 Yakima County	Azinphos methyl Thiodan 50WP	20	Applying pesticides				10/17/2007 10/19/2007	**Serious:** No Change out schedule for respirators: $1,000.00 No plumbed or portable emergency eyewash: $600.00 No replace of respirator filters at the end of the day: $0.00 No written respirator program: $0.00 **General:** No medical evaluation for respirator users: $0.00 Pesticide records were not readily accessible: $0.00 Inadequate pesticide records:$0.00 **Total Assessed**	Planned	Deciduous tree fruit Orchard

City, County Inspection # region	Pesticides Involved	#of Employees	How exposed	Other agencies involved	Incident date	Compliant date	Inspection date (opened) (closed)	Citations/costs	Type of inspection	Type of Business
								Penalties $1,600.00		
Royal City 311197214 Grant County	Chlorpyrifos	25	Working on irrigation			4/6/2007	4/6/2007 5/25/2007	**Serious:** Employer did not prevent workers from entering in treated areas under REI: $1,375.00 Employees entering location under REI were not provided PPE: $1,375.00 Employer did not provide oral notification of treated areas to workers $1,375.00 **Total Assessed Penalties $4,125.00**	Complaint	Deciduous tree fruit orchard
Granger 311305403 Yakima County	Gramoxone	60					9/6/2007 9/6/2007	**Serious:** No respirator change out schedule: $200.00 No written respirator program: $0.00 No plumbed or portable emergency eyewash: $450.00 No annual	Planned	Dairy Farm

City, County Inspection # region	Pesticides Involved	#of Employees	How exposed	Other agencies involved	Incident date	Compliant date	Inspection date (opened) (closed)	Citations/costs	Type of inspection	Type of Business
								respirator fit testing: $900.00 **General:** No medical evaluation for respirator users: $0.00 No hand towels or soap in mixing area: $0.00 No chemical inventory: $0.00 **Total Assessed Penalties $1,550.00**		
Chelan 311111132 Chelan County	Organic Pesticides Lime Sulfur Solution	10					5/25/2007 6/8/2007	**Serious:** No Emergency eyewash: $500.00 **Total Assessed Penalties $500.00**	Planned	Deciduous tree fruit orchard
Zillah Yakima County 31181333	Guthion Azinphos methyl Assail Intrepid Success Equip 70	6	Mixing and load				7/16/2007 8/15/2007	**General Citations** No emergency eyewash $0.00 No hazard communication program $0.00 **Total Assessed Penalties $0.00**	Planned	Deciduous tree fruit orchards
Granger Yakima	Gramoxio ne	80	Transferr-ing				6/22/2007 6/25/2007	**General Citations** Improper transfer	Planned	Cherries, apples, and hops

City, County Inspection # region	Pesticides Involved	#of Employees	How exposed	Other agencies involved	Incident date	Compliant date	Inspection date (opened) (closed)	Citations/costs	Type of inspection	Type of Business
County 311115182	Governor		pesticide					of pesticides from one container to another $0.00 No annual fit test $0.00 **Total Assessed Penalties $0.00**		
Prosser Benton County 311359483	Danto Rubigan Venom Flint	18	Outdoor work and opened cab tractors	WSDA			10/12/2007 10/12/2007	**General Citation:** Insufficient hazard communication program: $0.00 No written respiratory protection program: $0.00 No medical evaluations for respirator users: $0.00 **Total Assessed Penalties $0.00**	Referral	Wine Grapes
Prosser Benton County 311359459	Danto Rubigan Venom Flint	18	Outdoor work and opened cab tractors				10/12/2007 10/12/2007	**General Citation:** No Accident Prevention Program $0.00 **Total Assessed Penalties $0.00**	Planned	Wine Grapes
Colton Whitman	Syngenta Cruiser	1	Pesticide handling				11/6/2007 11/13/200	**General Citation:** No MSDSs:$0.00	Planned	Seed and Feed crops

City, County Inspection # region	Pesticides Involved	#of Employees	How exposed	Other agencies involved	Incident date	Compliant date	Inspection date (opened) (closed)	Citations/costs	Type of inspection	Type of Business
County 311425979	5FS Syngenta Dividend Extreme Wellmark Diacon						7	**Total Assessed Penalties $0.00**		
Quincy Grant County 311277990	Lorsban 4E	9	Applying pesticides				8/2/2007 8/21/2001	**General Citation:** No medical evaluations for respirator user $0.00 No fit test for respirator user $0.00 **Total Assessed Penalties $0.00**	Planned	Deciduous tree fruit orchards
Creston 311110613 Lincoln County	2,4 D	1	Field spraying	WSDA			6/8/2007 6/29/2007	**General:** No monthly safety meetings:$0.00 No written accident prevention program:$0.00 **Total Assessed Penalties $0.00**	Referral	Crop plants and construction
Mattawa 311357388 Grant County	Fungicide	35	Drift on to employees from aerial application	Health	5/25/2007		9/28/2007 9/28/2007	**General:** Employer did not take sufficient precautions when having employees apply fungicides to avoid possible	Referral	Apples and cherries

City, County Inspection # region	Pesticides Involved	#of Employees	How exposed	Other agencies involved	Incident date	Compliant date	Inspection date (opened) (closed)	Citations/costs	Type of inspection	Type of Business
								contact: $0.00 Employer failed to keep accurate records of pesticide application: $0.00 No respirator change out schedule: $0.00 **Total Assessed Penalties $0.00**		
Zillah 311114045 Yakima County		13					6/22/2007 6/22/2007	**General:** Employer did not maintain pesticide records: $0.00 Employer did not have MSDSs for pesticides for category 1 pesticides:$0.00 No documentation of safety meetings: $0.00 **Total Assessed Penalties $0.00**	Planned	Deciduous tree fruit orchard
Mattawa 311113807 Grant County	N-Methyl-Carbmate	15	Applying pesticides				6/21/2007 6/21/2007	**General:** No written respirator program: $0.00 Pesticide records are not readily accessible: $0.00	Follow-up	Deciduous tree fruit orchard

City, County Inspection # region	Pesticides Involved	#of Employees	How exposed	Other agencies involved	Incident date	Compliant date	Inspection date (opened) (closed)	Citations/costs	Type of inspection	Type of Business
								Total Assessed Penalties $0.00		
Ellensburg 311303200 Kittitas County	Herbicides	7					8/21/2007 8/31/2007	**General:** No written Haz Com program: $0.00 No Chemical inventory: $0.00 No MSDSs $0.00 **Total Assessed Penalties $0.00**	Planned	Forestry
Deer Park 311111025 Spokane County	Herbicides	30					8/22/2007 12/13/2007	**General:** No accident Prevention program: $0.00 APP did not identify pesticides: $0.00 No monthly safety meetings addressing pesticide use: $0.00 No annual inventory of pesticide storage: $0.00 No haz com program: $0.00 No chemical inventory list: $0.00	Planned	Nursery

City, County Inspection # region	Pesticides Involved	#of Employees	How exposed	Other agencies involved	Incident date	Compliant date	Inspection date (opened) (closed)	Citations/costs	Type of inspection	Type of Business
								Pesticide application records incomplete : $0.00 **Total Assessed Penalties $0.00**		
White Swan 311358048 Yakima County	Round-up	4					10/3/2007 10/3/2007	**General:** Employer did not provide information concerning pesticide application: $0.00 No Haz Com program: $0.00 No chemical inventory: $0.00 No MSDSs: $0.00 No written respiratory protection program: $0.00 **Total Assessed Penalties $0.00**	Planned	Ornamentals Nursery
Royal City 311223242 Grant County		6					8/2/2007 8/21/2007	**General:** No written respiratory protection program: $0.00 No medical evaluation for respirator users: $0.00	Planned	Deciduous tree fruit Orchard

City, County Inspection # region	Pesticides Involved	#of Employees	How exposed	Other agencies involved	Incident date	Compliant date	Inspection date (opened) (closed)	Citations/costs	Type of inspection	Type of Business
								No fit testing of respirators: $0.00 **Total Assessed Penalties $0.00**		

Appendix D
License Types and Enforcement Action Definitions

Washington State Department of Agriculture, Pesticide License Types
Washington State Department of Agriculture, Enforcement Action Definitions

Washington State Department of Agriculture, Pesticide License Types

WSDA Pesticide License Types

Commercial Applicator	A person engaged in the business of applying pesticides to the land/property of another. This land can either be publicly or privately owned. Prior to license issuance, a Financial Responsibility Insurance Certificate (FRIC) must be filed with WSDA by the insuring company.
Commercial Operator	A person employed by a WSDA-licensed commercial applicator to apply pesticides to the land of another. This land can either be publicly or privately owned.
Commercial Pest Control Consultant*	A person who sells or offers pesticides for sale at other than the licensed pesticide dealer outlet from which they are employed. In addition, commercial consultants may offer or supply technical advice or make recommendations to the users of non-home and garden pesticides. They may also perform wood destroying organism inspections. Licensed and employed commercial applicators and commercial operators may act as commercial consultants without acquiring the consultant's license.
Dealer Manager*	A person who supervises the distribution of pesticides (other than home and garden products) from a licensed pesticide dealer outlet.
Private Applicator	A person who applies or supervises the application of a "Restricted Use" pesticide on land owned or rented by him or his employer for the purpose of producing an agricultural commodity.
Private Commercial Applicator	A person who applies of supervises the use of a "Restricted Use" pesticide on land owned or rented by him or his employer for purposes other than the production of an agricultural commodity.
Public Operator	A person who, while acting as an employee of a governmental agency, applies restricted use pesticides by any means or general use pesticides by power equipment on public or private property. Public operators may act as public consultants. (Public operators licensed only in the Public Health category are exempt from the fee.)
Public Pest Control Consultant*	A person who, while acting as an employee of a governmental agency, offers or supplies technical advice, supervision, aid, or makes recommendations to the user of pesticides other than home and garden products. Public Consultants may not act as public operators without the operator's license.
Demonstration and Research Applicator	A person who applies or supervises the use of any experimental or restricted use pesticide to small experimental plots at no charge. Public employees performing research applications fall

	under the licensing requirements of the public operator.
Structural Pest Inspector	An individual who performs the service of inspecting a building for wood-destroying organisms, their damage, or conditions conducive to their infestation. Wood-destroying organisms include insects or fungi that will consume, excavate, develop in, or otherwise modify the integrity of wood or wood products. They include, but are not limited to, carpenter ants, moisture ants, subterranean termites, damp wood termites, beetles in the family Anobiidae, and wood decay fungi (wood rot).

**License does not allow the holder to use or supervise the use of a restricted use pesticide. Refer to other types for appropriate license.*

Washington State Department of Agriculture, Enforcement Action Definitions

WSDA Enforcement Action Definitions

No action indicated	Not a pesticide complaint, or Not valid, or No violations noted, or No further action required.
Technical assistance	WSDA provided information only.
Verbal Warning	No evidence for further legal action but person was cautioned verbally by WSDA. No permanent record of warning.
Advisory letter/Warning letter	Some evidence of violation but not enough to take legal action. Person was warned to be more cautious.
Notice of correction	Notified that a minor violation must be corrected. Usually given thirty days. If corrected, no further action. If not corrected, further action is taken.
Notice of Intent/Administrative action **Legal case**	Usually results in a fine and/or license suspension for a varying interval.
Referred	Sent to another agency for action. The violation is not in WSDA jurisdiction.
Stop sale	Further sale of the product is prohibited until violation corrected. Generally an unregistered or damaged product.

Appendix E
Department of Ecology

Washington State Department of Ecology Maps

Appendix F
2008 PIRT Letters

Support of Implementation of IPM in Washington Schools

Enclosure: School Cases in Washington State, 2000 - 2006

Update on 2007 PIRT Activities and Issues and 2006 Agency Data

Renomination of Dr. Steve Gilbert as PIRT Toxicologist

Recommendations for Label and Packaging Changes for Foggers and Aerosols

Recommendation of Dr. Karl Arne as PIRT Toxicologist

Response to Request for Information on Roadside Pesticide Use and Safety

Enclosure: Summary of 2000 - 2007 Department of Health and WSDA Roadside Pesticide Complaints

STATE OF WASHINGTON
PESTICIDE INCIDENT REPORTING AND TRACKING REVIEW PANEL
P.O. Box 47846
Olympia, Washington 98504–7846

February 28, 2008

The Honorable Representative Jamie Pedersen
Post Office Box 40600
318 John L. O'Brien Building
Olympia, Washington 98504-0600

Dear Representative Pedersen:

The Pesticide Incident Reporting and Tracking (PIRT) Panel was established by the Washington State Legislature in 1990 to ensure that state agencies responsible for pesticide regulation coordinate their incident investigations, reporting, and education activities in a timely manner to protect workers and the public from pesticide misuse. The PIRT panel consists of representatives from six state agencies, University of Washington, Washington State University, the Washington Poison Center, a toxicologist and a member of the public. The PIRT provides the governor, agency heads, Legislature, and public with an annual report on PIRT activities and agency pesticide incidents.

The PIRT panel would like to strongly support the concept of requiring the implementation of integrated pest management (IPM) in Washington school districts. The PIRT panel also supports the concept of all school districts implementing IPM programs by the year 2013. IPM is an effective preventative approach to pest management that uses multiple tools to control pests. Adoption of IPM in school environments has been associated with reduced need for chemical pesticides. This minimizes the potential for direct exposure of children and decreases the contribution of these chemicals to the environment.

Washington Department of Health data collected on reported pesticide-related illnesses and injuries show there were 15 incidents at schools or involving school buses between 2000- 2006. These incidents involved 43 sick persons (18 children and 25 adults). Most of the symptoms reported were of low severity but in most incidents, at least one person sought health care. Ten of 15 incidents involved

pesticide use at a school. Five incidents (involving 29 people) were associated with pesticide drift from neighboring properties. These incidents are further described in the attached document.

We also strongly recommend that records of school pesticide use and integrated management policies be made readily available to parents as required by RCW 17.21.415. Parents have the right to be informed about pesticide use in their children's schools.
Thank you for your attention to this important matter.

Sincerely,

Cynthia Lopez, DrPH
Chair, PIRT

Enclosure

cc: Gregg Grunenfelder, Environmental Health Director
Mary C. Selecky, Secretary, Department of Health

School Cases in Washington State, 2000 - 2006

In Washington state, health care providers are required to report cases of pesticide- related illness or injury to Department of Health. The agency investigates reported cases and collects information that can be used for prevention. Between the years 2000- 2006, there were 15 reported pesticide exposure incidents involving 43 sick people at schools. Eighteen were children and 25 were adults. These cases were classified by Department of Health as possibly, probably, or definitely due to pesticide exposure (see How Department of Health classifies cases). Details of these cases are listed in the following table. The Department of Health Pesticide Program does not detect every case that occurs (see Limitations of Department of Health Pesticide-Illness Data).

Year	County	DOH Determination	Functional Class/Active Ingredient	Incident Description
2000	Grant	1 Possible	Insecticide/Diazinon	38-year-old pregnant teacher developed symptoms after smelling drift from an insecticide application to back yard fruit trees next to the school. She sought medical treatment the same day. Washington State Department of Agriculture (WSDA) investigation noted that the odor had entered the school air conditioning system.
2000	King	1 Possible	Insecticide/Chlorpyrifos	20-year-old female sprayed an insecticide in her college dorm room for spiders. The can had been provided by maintenance staff. It was industrial strength and she used it incorrectly. She became ill shortly after applying the product, and sought medical care. Symptoms resolved in one week.
2000	Grant	13 Probable 11 Possible	Fungicide/Chlorothalonil Insecticide/Methamidophos Insecticide/Propargite	Nine teachers and 15 students reported mild symptoms after an aerial application to a potato field next to a school district. The application occurred shortly before staff and students arrived. WSDA tests were positive for pesticide residues around the buildings.

Year	County	DOH Determination	Functional Class/Active Ingredient	Incident Description
2001	Chelan	1 Probable	Insecticide/Carbaryl Insecticide/Formetanate Hydrochloride Insecticide/Azinphos-Methyl Herbicide/Algicide/Ethephon Insecticide/Bacillus Thuringiensis	A 12-year-old female middle school student developed systemic symptoms after orchard spray drifted onto school grounds. WSDA samples of vegetation and of her clothes were positive for residues in the grassy area where she sat during her physical education class. She sought treatment at an emergency room (ER).
2001	King	1 Probable	Herbicide/Algicide/Glyphosate Isopropylamine Salt	41-year-old male campus gardener was spraying weeds when the spray splashed back into his left eye. He immediately washed out his eyes. The local fire department was summoned and they irrigated his eyes, but he continued having discomfort and sought medical care.
2001	Douglas	1 Probable	Insecticide/Tetramethrin Insecticide/Phenothrin, D-	A 51-year-old female elementary school teacher developed symptoms after entering a building that had been treated. An application was conducted next to her workspace which left a smell. She sought medical treatment for respiratory symptoms.
2002	Franklin	1 Possible 1 Probable	Insecticide/Dimethoate	24 children and their bus driver were exposed to insecticide on their way home from school. Spray drift came through their school bus windows from an aerial application to a field adjacent to the road. Two individuals had mild symptoms. Neither sought medical care. WSDA samples were positive for pesticide residues in bus.

Year	County	DOH Determination	Functional Class/Active Ingredient	Incident Description
2003	Thurston	1 Possible	Insecticide/Tralomethrin	A 46-year-old male community college custodian inhaled pesticide mist while activating a fogger. The release mechanism malfunctioned and the custodian stayed in the room longer than he should have as he tried to correct the problem. He sought medical care for respiratory symptoms.
2004	Benton	5 Probable	Herbicide/Pendimethalin, N-	An unlicensed school employee applied an herbicide to a school parking lot and sidewalk at 6:30 am on a school day. Notification and signage were not carried out. Several students and faculty members became ill after smelling the vapors from the application. Students and employees were evacuated from the facility.
2004	King	1 Probable	Insecticide/Glyphosate, Isopropyl Amine Salt Other/Oryzalin	A 43-year-old female teacher was on break outside when an herbicide application was taking place. She smelled the chemical and she relocated. She began coughing. When her coughing continued for about three hours, she sought medical care.
2004	Pierce	1 Possible	Herbicide/Algicide/Glyphosate, Isopropylamine Salt	A 23-year-old male landscaper assistant made a weed control application with a hand sprayer at a high school. He did not recall any significant contact with a chemical. However, that evening he developed dermal symptoms on his extremities. The next day he went for medical treatment for what was believed to be an allergic reaction.
2006	King	1 Possible	Insecticide/Chlorfenapyr	A 52-year-old female university employee had a severe but short-lived asthma attack after a nearby office was sprayed with insecticide. No samples were taken to confirm drift. She took asthma medications and was seen in the ER 30 minutes post-exposure. Symptoms resolved shortly afterwards. In response, her employer implemented a new policy to use alternative methods of pest control and notify her before any application in her area.

Year	County	DOH Determination	Functional Class/Active Ingredient	Incident Description
2006	Adams	1 Possible	Insecticide/Carbaryl Other/Benzyladenine N6-	A 63-year-old female school bus driver reported symptoms after her bus received pesticide spray drift from an orchard sprayer. She reported spray was heavy enough that she had to turn on her windshield wipers. Her window was open. She did not seek medical attention. No students on the bus reported symptoms from the incident. WSDA investigated but did not take samples.
2006	Pend Oreille	1 Possible	Herbicide/Algicide/Dimethlyamine 2-4-dicolorophenoxyacetate Herbicide/Algicide/ Dichlorophenoxyacetic Acid, 2,4-	A 56-year-old female kindergarten teacher reported smelling herbicide odor in her classroom. An outside area 25 to 30 feet away had been treated one hour before. Within 45 minutes she reported neurological, ocular and respiratory symptoms. She left school early and sought medical care the next day. WSDA investigated and all notification requirements had been met. There were no other reports of illness.
2006	Thurston	1 Probable	Insecticide/Potassium Salts of Fatty Acids	A 20-year-old female student in a college horticulture class received drip of insecticidal soap in eyes while spraying hanging baskets. She developed eye symptoms and sought health care the following day. The teacher planned to use this as a teaching case to motivate students to “always wear gloves and goggles, even with insecticidal soap.”

STATE OF WASHINGTON
PESTICIDE INCIDENT REPORTING AND TRACKING REVIEW PANEL
P.O. Box 47846
Olympia, Washington 98504–7846

May 27, 2008

The Honorable Tom Campbell, Chair
House Select Committee on Environmental Health
Post Office Box 40600
Olympia, Washington 98504-0600

Dear Representative Campbell:

This letter serves as an update on activities and issues from the legislatively created Pesticide Incident Reporting and Tracking (PIRT) Review Panel. It is intended to accompany a preliminary 2007 Department of Health (DOH) Pesticide Incident Reporting and Tracking report that describes DOH cases that occurred in 2006. The final 2007 PIRT report will be submitted to the Office of Financial Management by DOH in mid 2008. This report will include 2006 pesticide incidents that were reported to, or investigated by, the Washington State Department of Agriculture (WSDA), the Department of Ecology (Ecology), the Department of Labor and Industries (L&I), and the Washington Poison Center (WAPC). More comprehensive identification of trends, issues, and needs will be included in that report.

The PIRT Panel was created through RCW 70.104.070 to 70.104.090. It includes members from six state agencies, the Washington Poison Center, University of Washington, Washington State University, a professional toxicologist, and a member of the general public. The PIRT Panel's mandate includes identifying inadequacies in state or federal law that result in insufficient protection of public health and safety; identifying pesticide trends, issues, and needs; and making recommendations for improved pesticide use practices.

The PIRT Panel met approximately monthly in 2007. Discussion topics and activities have included:

- **Pesticide drift**: presentations on drift from Washington and California experts; discussion of scientific literature; 2006 legislation; recent WSDA and DOH drift data; and implementation of a "drift checklist" for pesticide incident investigations.

Pesticide-related legislation: including House Bill 1806, which limited the use of high hazard pesticides on school facilities; House Bill 1946, which established a pesticide use reporting system; and House Bill 1810, which created a project to monitor pesticide drift and its impact. A letter supporting House Bill 1946 and the PIRT Panel's Resolution on Air Monitoring were sent to Representative Tom Campbell, Chair of the House Select Committee on Environmental Health. In 2007, the Legislature allocated funding which directed the Department of Health to establish air monitoring studies to be conducted by Washington State University and the University of Washington.

- **Cholinesterase monitoring:** including discussion of the utility and uniqueness of this L&I program, and updates from the agency. In July, PIRT sent a letter to Judy Schurke, director of L&I, recommending ways to rectify problems the program experienced this year as it transitioned cholinesterase testing of blood to a private laboratory.

- **The April PIRT meeting was held in Yakima** and featured topics of interest to the agricultural community such as: the phase out of Azinphos-methyl; *El Proyecto Bienestar*, community based research to improve the health of farm workers and their families in the Yakima Valley; Surface Water Monitoring for Pesticides in Salmon Bearing Streams; 2007 Drift Checklist: Collecting Information on Risk Factors for Agricultural Drift; and PIRT Panel business items, such as the reappointment and recruitment of PIRT Panel Governor Appointees, and PIRT Panel Action Recommendations. Simultaneous Spanish language interpretation was provided to encourage more participation by the Hispanic agricultural community.

- **Science Corner** is a feature of most PIRT Panel meetings. PIRT Panel members discuss a recent research paper or issue in order to interact as a panel, benefit from the professional experiences of panel members, and increase our general knowledge. Examples of papers discussed include: "Testing Pesticides in Humans - Of Mice and Men Divided by Ten" by Sheldon Krimsky, PhD and Tania Simoncelli, MS, and "Lessons Learned from the Children's Environmental Exposure Research Study" by David B. Resnik and Steven Wing.

- **In consultation with Mark Calkins, Assistant Attorney General,** the PIRT Panel has worked to clarify its authority and improve meeting records and voting procedures. Changes have been adopted to improve communication and increase transparency to stakeholders. For example, increased use of the Internet can improve efficient distribution of meeting materials. Recording "no" votes and abstentions/recusals, in addition to "yes" votes in meeting minutes, can improve the accuracy of the public record regarding complex decisions. A "findings" section included in the

- annual report will speak to some important policy positions approved by PIRT Panel members.

West Nile Virus (WNV): Discussions have included human health risk assessment of WNV versus potential adverse effects from pesticide use to control mosquitoes; updates on occurrence of WNV in Washington; mosquito control permit activities by Ecology; and collaboration between agencies on WNV messages on prevention and repellent use.

PIRT member agencies are engaged in many actions to improve pesticide incident reporting and reduce pesticide incidents:

- Coordinating to enhance agency pesticide incident investigation checklists to standardize the information collected during interviews by L&I, DOH and WSDA, so that agencies can combine data and track risk factors more easily and provide more precise, data-driven training to help reduce drift.

- Leading the pesticide air monitoring project and voluntary notification project. PIRT will continue to receive updates.

- Monitoring research and technical assistance efforts associated with phasing out organophosphates and identifying alternatives. Two PIRT members participate on the Washington Tree Fruit Research Pesticide Management Transition Project's advisory board and regular updates have been requested.

- PIRT is discussing trends and activities associated with pesticide use in schools.

2006 Pesticide Incidents

The attached report describes the DOH 2006 pesticide exposure incidents and investigation results. A brief summary and insights of the PIRT agency cases and findings follows.

The Department of Health

In 2006, DOH Pesticide Program investigators classified 149 of 254 (58%) reported cases as definitely, probably, or possibly related to pesticide exposure. Of these, 126 (85%) were classified as mild, 20 (13%) as moderate and two (1%) as severe. There was one pesticide-related death. More of these cases occurred in eastern (82) as compared to western (67) Washington. Forty-four of these were agricultural cases and 105 were non-agricultural. For several reasons, agricultural cases are more difficult to classify and a greater percentage have insufficient information to make a classification. As in prior years, most of the cases (78%) occurred in April through September. There were 17 cases involving children under age 18, and 11 of these children were under age six. Most were accidental or unintentional.

As in prior years, drift continues to be the number one source of pesticide illness in agriculture. Cholinesterase inhibiting insecticides continue to be the class of pesticide most highly associated with DPP cases. DOH continues to study the mechanisms and risks associated with drift

exposures through the drift checklist project in conjunction with NIOSH and through the drift air monitoring study funded by the Washington State Legislature. DOH will complete these studies, evaluate resulting data, and provide policy recommendations in future reports. DOH is also coordinating with L&I on transitioning the cholinesterase monitoring database system to the Division of Occupational Safety and Health while maintaining data quality and access for the Pesticide Program.

Department of Agriculture

In 2006, WSDA had 25 complaints about possible human exposure to pesticides. Seven of these complaints were determined to be valid. Three were due to direct exposure and four were due to exposure from drift. The four drift cases were all agriculture related and were from applications of an Insecticide/Fungicide mixture to orchards. These four human exposures were all to bystanders. One of the direct exposure cases was agriculture-related and was contact to a Growth Regulator when thinning in apples. The remaining two concerned contact during disposal of cardboard containers and exposure from a commercial weed control application to a residence. None of the cases required more than temporary medical care. Also in 2006, WSDA has seen a slight increase in the number of reported animal poisonings and a slight decrease in the number of complaints due to faulty Structural Pest Inspections.

Department of Labor and Industries

Within L&I, the Division of Occupational Safety and Health (DOSH) is responsible for worker protection programs, and the Health Insurance Services Division is responsible for administration of the workers' compensation program. DOSH conducts safety and health inspections in all industries statewide, including agriculture pesticide worker protection, using standards adopted in chapter 296-307 WAC. The Health Insurance Services Division Claims Administration program processes worker compensation claims, including those related to pesticides. The following is a summary of the 2006 pesticide-related agency data.

In 2006, DOSH conducted seventeen (17) pesticide-related safety and health inspections. Of the 17 inspections, 11 (65%) were located in eastern Washington and six (35%) were located in western Washington. Fourteen of the 2006 inspections occurred in agriculture. The majority of violations were for deficient respiratory protection programs.

During the 2006 agriculture pesticide application season, there were 471 pesticide handlers who underwent periodic cholinesterase testing at least once during the application season. Of these, there were 50 (10.6%) whose test results reflected at least one test with a 20 percent or greater depression in cholinesterase activity, requiring the employer to evaluate pesticide handling practices. There were seven (1.5%) individuals temporarily removed from further exposure to cholinesterase-inhibiting pesticides because their test results exceeded the work removal action level. More information concerning the cholinesterase monitoring program can be found at http://www.lni.wa.gov/Safety/Topics/AtoZ/Cholinesterase/default.asp.

In 2006, the Health Insurance Services Division of L&I processed 59 claims which appeared to be linked to pesticide exposure. The number of pesticide-related claims decreased in 2006 by 50 percent from 2005.

Department of Ecology

In 2006, Ecology collected information on pesticide related complaints related to the environment, aquatic pesticide usage data, pesticide-contaminated cleanup sites, and pesticide occurrence in Washington state surface waters. Ecology logged 11 complaints related to possible pesticide contamination of soil, air and/or water. All of these were responded to within 24 hours, and five of the 11 were referred to other agencies for follow-up. Ecology added seven pesticide-contaminated sites to the active cleanup list in 2006. Ecology issues seven permits that cover the use of pesticides in water. There is pesticide usage data for these chemicals included in the final PIRT report. Also in 2006, Ecology added surface water monitoring for pesticides in the Skagit-Samish watershed. This is a new site added to the data collection from Thornton Creek and the lower Yakima watersheds.

Washington Poison Center

In 2006, the Washington Poison Center saw a continued pattern of increase in pesticide-related calls. Matching a trend seen nationally, fewer calls involved organophosphate pesticides and more involved pyrethrins and pyrethroids. The only fatal pesticide-related case reported to the Poison Center in 2006 involved a pyrethroid and highlighted the need for the Poison Center to work with DOH and other agencies to increase awareness and expertise in the management of this growing problem.

Important Pesticide Issues and Trends

Increased use of integrated pest management and certified organic growing methods, which can include use of certain pesticides, are important trends that may affect pesticide incidents in future years. These systems are unlikely to totally replace conventional growing methods that include chemical pesticide use for many producers and many crops, so pesticide education and regulation will continue to be an important role for the state and federal government.

As some chemicals are no longer registered or manufactured, the changing availability of pesticides can potentially influence pesticide incidents. Users must gain familiarity with aspects of new pest management systems, such as pest monitoring, pesticides, application methods and equipment, and potential chemical interactions. Research, extension services, and technical transfer work can facilitate safe transitions to new pest management systems. These services are especially important for specialty agricultural crops that do not have substantial industrial commitment to pesticides and use techniques.

Washington State's Cholinesterase Monitoring Program is an important tool for determining whether pesticide handlers are being exposed to certain agricultural pesticides. Timely intervention can be triggered at exposure levels below those at which physical symptoms develop. PIRT has been following this program since its inception in 2004, and has made recommendations on rectifying problems the program experienced this year as it transitioned cholinesterase testing to a private laboratory. Efforts must be made to continue high quality laboratory work, data sharing elements of this program, and active communication to improve the confidence with which it is held by workers, growers, the public, and regulatory agencies. It should be emphasized that Washington State's Cholinesterase Monitoring Program is unique in the United States. No other state has both collected biological marker data on its applicator/handler population tested samples and centralized the collection and analysis of that data. This provides extremely valuable information which is available for use in federal decision making. In October, two presentations about the Cholinesterase Monitoring Program were given at the Arlington, Virginia Environmental Protection Agency conference, which was devoted to the Worker Protection Standard. An update was also provided at the March 2007 Association of American Pesticide Control Officials Meeting. These presentations have prompted extensive discussion illustrating the interest in our program on the part of regulators, worker advocates, and agricultural industry groups.

Bilingual education is an important part of reducing incidents. Anxiety increases and safety is reduced when workers cannot communicate or understand the warnings and procedures of their supervisors and pesticide safety materials. Bilingual programs, pesticide information, and safety materials improve training, increase worker confidence, and enhance safety. WSDA, L&I and DOH all participate in, or conduct, bilingual pesticide safety education programs.

Under-estimation of the true burden of pesticide-related illnesses likely continues to impact our assessments of pesticide over-exposure, incident causes, and pesticide use trends. Studies of underreporting conducted by the DOH both through a cross-referencing of reporting sources (known as capture-recapture methods), and focus group interviews with farm workers, suggest that both underreporting and under-diagnosis (pesticide illness unrecognized by health care providers) may continue to contribute to underreporting. Improvements in

automated electronic reporting from hospitals and other health care facilities could reduce some underreporting. Better education of health care providers and alerting workers to signs and symptoms of pesticide overexposure may help reduce under-diagnosis. Informing workers of their rights within the worker compensation system may also increase the likelihood that an overexposed worker will bring an occupational illness, such as a pesticide overexposure, to the attention of providers. This in turn may prompt the clinician to consider pesticide poisoning as a diagnostic possibility which might be otherwise overlooked. To accurately target interventions, talking to workers, growers, and health care providers to identify the issues that limit reporting and then developing a plan of action to address those causes could also be beneficial.

“Pesticide Use” information, the amount and types of pesticide purchased and used, is valuable for epidemiological health data and for studying trends. Currently, it may be difficult to discern whether high numbers of pesticide exposure cases are related to higher hazard or simply to more widespread use. Good denominator data are critical for determining which pesticides are most problematic. High quality information about pesticide use in Washington could address this uncertainty, but must be established and employed appropriately to achieve desired benefits with consideration to costs. PIRT is supportive of the “pesticide use notification” and “pesticide air quality monitoring” studies that are being implemented in 2007 by WSDA and DOH, respectively. These will potentially provide insight into methods for reducing pesticide exposures to vulnerable populations and into the occurrence and implications of pesticide drift patterns.

As West Nile Virus moves into Washington, health, pesticide regulatory, and emergency management agencies must be ready to address health concerns and possible increased pesticide use levels with sufficient incident information, technical assistance capability, and regulatory capacity. County agents and others charged with addressing preventive measures through public education and mosquito control should be assisted by state agencies to assure all parts of Washington are appropriately prepared.

Legislative Issues:

PIRT is working on ways to streamline and speed production of the annual DOH PIRT report. Because of the extensive nature of investigations, cases that occur one year may not be “closed” until late the next year. The time required for trend analysis, agency reviews, and report production seems to prevent a report of the most current case data being available at the beginning of a legislative session. DOH and the PIRT Panel would like to work with the Legislature to ensure timely communication occurs, expectations are reasonable, and annual case statistics are documented and archived.

It would be useful for the PIRT Panel to meet with members of the Legislature or the legislative staff to establish acquaintances, improve mutual knowledge, and identify appropriate communication channels.

Please contact us if there are questions or concerns about the contents of this letter and to plan for making improvements to the communication relationship with the PIRT Panel.

Sincerely,

Cynthia Lopez, Chair
Pesticide Incident Reporting and Tracking Panel
360.236.3340 or 1.877.485.7316

cc: Agency Directors (DOH, WSDA, Ecology, DNR, L&I, Fish and Wildlife)
Keith Phillips, Executive Policy Unit
Michelle Davis, Policy, DOH Legislative and Constituent Relations

STATE OF WASHINGTON
PESTICIDE INCIDENT REPORTING AND TRACKING REVIEW PANEL
P.O. Box 47846
Olympia, Washington 98504–7846

July 11, 2008

The Honorable Christine O. Gregoire
Governor of Washington
P.O. Box 40002
Olympia, Washington 98504-0002

Dear Governor Gregoire:

The PIRT Panel would like to re-submit to your office the nomination of Dr. Steve Gilbert for the Toxicologist position with the PIRT. Again, Dr. Gilbert is highly qualified, eager to serve, willing to attend meetings and chair sub-committees, and has made substantial contributions to the PIRT. A toxicologist member is crucial to the completion and quality of our work.

Of course, the Panel understands that this is your appointment. In the event that you opt to move forward to re-open the application process, the Panel would like to offer our usual assistance in reviewing applications and conducting interviews. Please let us know if we may be of any additional assistance to you and what the timeline would be for this.

In the interim, the PIRT is operating with only ten members, compromising our ability to move forward on tasks such as production of the PIRT Report. Would you consider requesting that Dr. Gilbert serve in the interim, during the recruitment and application process for a new toxicologist, so that the Panel may have a toxicology resource?

We thank you in advance for your consideration of re-nomination of Dr. Gilbert, our offer of assistance, and our proposed interim solution.

Sincerely,

Cynthia Lopez, Dr.PH
PIRT Chair

STATE OF WASHINGTON
PESTICIDE INCIDENT REPORTING AND TRACKING REVIEW PANEL
P.O. Box 47846
Olympia, Washington 98504–7846

August 7, 2008

The Honorable Christine O. Gregoire
Governor of Washington
P.O. Box 40002
Olympia, Washington 98504-0002

Dear Governor Gregoire:

This letter will serve to provide you with PIRT Panel input on the four applicants for the toxicology member position your office provided. A subcommittee interviewed all four candidates. In summary, all candidates were pleasant and engaging. The majority of PIRT panel members concluded that although the candidates did not have doctoral degrees in toxicology, they all had degrees in related fields.

Of the applicants provided, the PIRT Panel recommends the appointment of Dr. Karl Arne. Of the candidates, he has the most experience with pesticides and risk assessment and he does not have any conflict of interest or potential conflict of interest. He has substantial experience working with farmers and the agricultural community in Washington during his many years at EPA Region 10. During the interviews, Dr. Arne was far superior to the other candidates in expressing his knowledge of PIRT and pesticide issues. He was clearly enthusiastic and came prepared with pointed and relevant questions for the subcommittee. He also has the commitment and time to serve. His references are impeccable.

Two other candidates had appropriate toxicology related backgrounds, Drs. Tsuji and Fairbrother. However, their pesticide experience was a small part of their overall risk assessment work. Dr. Tsuji is experienced with metals and Dr. Fairbrother has experience on Superfund and wildlife issues. Additionally, they did express some potential difficulties with committing to attending meetings and spearheading subcommittees; Dr. Tsuji currently has other appointments and cannot fully commit to PIRT until next year and Dr. Fairbrother has business related travel planned. Last, both have agro-chemical clients which could create a conflict.

The subcommittee appreciated Dr. Tsuji being forthcoming with this information, and her willingness to recuse herself if there was a conflict. The PIRT panel is concerned with the appearance of a financial conflict of interest given ethical considerations and the recent scrutiny the Panel has received from the public.

We understand it is difficult to find a toxicology member for the PIRT panel that is qualified as a toxicologist, has substantial knowledge about pesticide issues, does not have a financial conflict of interest, and has time to serve. For these reasons, Dr. Steve Gilbert was the optimal nominee. It is unfortunate that PIRT's recommendation for his reappointment was not accepted.

The PIRT panel appreciated being able to discuss the candidates and the official meeting record will be the PIRT approved final minutes, available in September.

We thank you in advance for your consideration of our input regarding the nominees. We encourage you to appoint Karl Arne as the toxicology member for the PIRT panel.

Sincerely,

Liesl Zappler,
PIRT Public Member
Interview Subcommittee Chair

STATE OF WASHINGTON

PESTICIDE INCIDENT REPORTING AND TRACKING REVIEW PANEL

P.O. Box 47846

Olympia, Washington 98504–7846

October 2, 2008

The Honorable Tom Campbell, Chair
House Select Committee on Environmental Health
Post Office Box 40600
Olympia, Washington 98504-0600

Dear Representative Campbell:

In 2007, you asked the Pesticide Incident Reporting and Tracking Panel (PIRT) to provide additional information regarding pesticide safety and trends along roadsides. This letter describes PIRT's actions, comments, and conclusions related to this issue. It includes two summaries of recent pesticide exposure investigations.

<u>In recent months, PIRT has investigated roadside spraying issues in the following ways:</u>

PIRT received presentations and testimony from practitioners such as:

- Ray Willard, Washington Department of Transportation (DOT). DOT maintains ten percent of the public roads in Washington and recently went though an integrated pest management program update. DOT's program is a model for state roadside maintenance.
- Patrick Soderberg, Thurston County. Thurston County has adopted an integrated pest management (IPM) program that guides control measures and has contributed to significant reductions in herbicide use. They sponsor regular training programs.
- Sean McDougal, Pierce County. Pierce County has a very large population and large number of roads. Pierce County uses some IPM strategies.
- Don Wallace, Forester, Hampton Tree Farms, Mt. Vernon, Washington. The Tree Farm uses mowing, road abandonment, and herbicide spraying to maintain its 450 miles of roads in compliance with Forest Practices rules. He states that herbicides are an environmentally safe and effective tool.

PIRT conducted an informal survey of counties on their roadside pesticide use. Eighteen of 39 counties responded. Most have pesticide use "as needed" or for noxious weeds only. Only one county (San Juan) indicated "No pesticides." Six counties have a "no spray" policy, but still use pesticides occasionally for noxious weeds.

PIRT received a presentation from Paul Figueroa, Investigator, Pesticide Compliance Program, Washington State Department of Agriculture (WSDA) on his 2007 Right of Way cases and inspections. He described that nine of 13 cases had violations. A total of 48 violations occurred, about equally divided between Contractors (20) and Public Agency Employees (28).

Liesl Zappler, PIRT's public member, contacted several counties and state weed program coordinators to inquire about the use and success level of biological control methods and programs.

Review of PIRT Data

In the last eight years PIRT agencies have investigated approximately 100 pesticide incidents[14] regarding pesticide drift (mainly to non-target vegetation) or human exposure associated with roadside vegetation maintenance. This is a very low number in comparison to all pesticide incident investigations which frequently exceed 500 annually. These cases have been documented in annual PIRT reports. For your convenience, short summaries of significant Department of Health (DOH) cases and WSDA investigations related to Right of Way complaints are provided as attachments to this letter.

From 2000 through 2006, investigations conducted by DOH resulted in documentation of fourteen incidents related to roadside pesticide treatments in which people experienced adverse health effects that were classified as definitely, probably or possibly ("DPP") caused by pesticide exposure. Seven of these incidents (involving eight people) took place when a DOT, county, city or parks employee was applying herbicide for roadside vegetation management. Seven of these incidents (resulting in 13 people classified as DPP effects) did not directly involve weed control practices (e.g., exposure of people to mosquito control activities along roadways).

From 2000 to 2007, WSDA investigated seventy-seven complaints related to roadside pesticide misuse or exposures. There were fewer than ten per year and no increasing or decreasing trends are perceived. When complaints could be verified, human failures such as allowing drift due to wind or drift due to

[14] This is based on 75 unique WSDA investigations in 2000-2007 and 14 DOH cases from 2000-2006 that were determined to be Definitely, Possibly or Probably caused by pesticide exposure. Approximately 56.5% of all DOH-investigations result in a DPP determination, so approximately 25 roadside cases were investigated by DOH in this period. (75 + 25 = 100)

mechanical problems were common causes. Most complaints were about injury of non-weedy vegetation.

PIRT Comments

Vegetation management along roadways is important for road integrity, safety, weed control, and aesthetics. Many landowners use a variety of practices including hardscaping, mulching, planting low-maintenance vegetation, biological control, mowing, and herbicide treatments to reduce weeds and maintain roadside vegetation. Although some landowners have greatly reduced their herbicide use in recent years through integrated pest management practices, herbicides continue to be an important tool in roadside vegetation management. Because many causal or contributing factors in pesticide incidents are preventable, agency staff emphasize the importance of educating and training applicators in order to prevent pesticide incidents. We are not seeing a problem with specific labels or products. Problems occur from the way a chemical is applied. A commitment to reading and understanding pesticide labels needs to be fostered. Awareness of wind, proper equipment maintenance, and the hazards of misapplying pesticides is critical to safe roadside vegetation management. Counties and local governments may not have sufficient funding for adequate training to achieve the highest safety levels.

The trend in roadside vegetation management is toward decreased pesticide use for the mandatory work of maintaining roads.

Spraying is comparatively less expensive than mowing. In some places mowing is not a safe option. Mowing may not effectively control some vegetation. Washington DOT is a leader in integrated vegetation management decision making. Counties can look toward them as a model for local programs.

DOT and most counties have highly specific lists of pesticide options for managers. Most of these products are lower toxicity choices, do not have restricted use classification, and can also be purchased by homeowners. For example, DOT has choices of 24 pesticides. Fact sheets on each one are available at: http://www.wsdot.wa.gov/maintenance/vegetation/herbicide_use.htm . Written by Oregon State University, these informative fact sheets are useful for risk communication to staff and the public.

Although not a solution to all vegetation management goals, the majority of counties in Washington use biological controls, such as releasing highly specific herbivorous insects, to assist with the control of some noxious weeds. Counties have seen a decrease in their pesticide use with the success of their biological programs. The Integrated Weed Control Project receives funding through a grant from the USDA Forest Service, and supplies insects and education to county noxious weed programs. (Contact: jennifer.andreas@kingcounty.gov).

Specialized equipment exists for applying roadside maintenance pesticides directly to the target site. For example, diuron is applied from very low heights (a few inches) to the sterile margin adjacent to the hard road surfaces. Other less selective herbicides may be applied with a hose from the back of a tanker truck to more distant targets. Data are not currently collected on whether the application equipment and method contributes to pesticide exposures or complaints. Data could be gathered to investigate such patterns.

PIRT concludes that:

- The adoption of model Integrated Vegetation Management policies by DOT, Thurston and other counties has resulted in the beneficial trend of achieving road maintenance goals while reducing overall herbicide use and increasing selective choices of herbicide products
- There has not been an increasing or decreasing trend in recent Right of Way pesticide incidents or complaints.
- Herbicides are an important roadside vegetation management tool because of low cost, efficacy, control of certain plants that are spread or exacerbated by mowing, and maintenance requirements for certain parts of the roadway where any/all vegetation causes unacceptable damage.
- The public and environment are protected from exposure to herbicides used in roadway maintenance via: labeling instructions that prohibit drift; licensing and training programs for applicators; use of appropriate equipment that directs herbicide to target vegetation; notification of pesticide sensitive individuals or the option for adjacent owners to maintain roadside vegetation; and Forest Practices rules which prohibit chemical use near waterways (including some ditches).
- Many integrated vegetation management plans include preventive techniques such as biological control methods. While the use of biological control methods may not be applicable to all areas, promising examples exist at this time. Successful biological control programs in states such as Montana, Oregon and Idaho directly receive dedicated state funding. PIRT would encourage Washington State to similarly directly fund the Integrated Weed Control Project and related programs to achieve greater success in pesticide reduction and noxious weed management.
- A number of counties have restricted the use of pesticides for roadside vegetation maintenance. However, widespread adoption of policies that ban pesticides (such as in San Juan County) are not feasible in all places.
- Improvements in public protection could be achieved by improving training of applicators and increasing program transparency to the public. A strategy of making vegetation management information more accessible (such as large signage on spray equipment that includes product names and “If you need more information, please contact…”) could reduce public concerns, distribute high quality information, and increase awareness.

PIRT appreciates the opportunity to offer our input and experience related to prior pesticide incidents and prevention strategies. Please consider the benefits and drawbacks of all methods of vegetation management recognizing that different approaches will be more appropriate in different areas of the state, different target plants, and on different types of roads.

Although it is challenging for the PIRT Panel to prepare rapid responses to specific questions, please let us know how we can be of service to the Legislature. We hope to serve as a useful asset integrating the experiences of the six member agencies, University of Washington, Washington State University, Washington Poison Center, a Toxicologist, and the Public. We hope that this information has been helpful to you.

Sincerely,

Karen Ripley, Chair
Roadside Pesticide Sub-committee
Pesticide Incident Reporting and Tracking Panel

cc:

Attachment: Summary of 2000 -2007 DOH and WSDA Roadside Pesticide Complaints

Department of Health

Applicator	Date	Incident Description
County	04/20/2000	A 48-year-old female developed chest tightness, shortness of breath, headache, nausea, bad taste in mouth and diarrhea after she inhaled and felt pesticide spray from county roadside weed application. A health care provider was seen two weeks post exposure. Herbicide/algicide: Diuron (ANSI), Acetic acid, (2,4-dichlorophenoxy)-, 2-ethylhexyl ester 1 Possible severity: Low/Mild
DOT	06/19/2002	A 50-year-old male transportation department employee was driving with windows open directly behind a ground sprayer. He developed symptoms and stayed home for one day. He did not seek medical care. Herbicide/algicide: chlorophenoxy compound 1 Possible severity: Low/Mild
DOT	06/06/2002	A 32-year-old male drove by a roadside herbicide application on Interstate-90. The interior of his car became foggy and he had to wipe off his windshield. He became ill and was taken by ambulance to the Emergency room. Herbicide/algicide: Dimethylamine 2,4-dichlorophenoxyacetate, Chlorsulfuron (ANSI), Dicamba, diglycoamine salt 1 Probable severity: Low/Mild
County	06/17/2003	A 43-year-old female traffic control flagger developed respiratory symptoms after a right-of-way herbicicide application close to her work area. She sought medical treatment four days later. Herbicide/algicide: Metsulfuron-methyl, Dicamba, dimethylamine salt; MCPA, dimethylamine salt 1 Definite severity: Moderate
County	07/21/2004	A 46-year-old chemically sensitive disabled female and a 51-year-old male developed neurological, ocular and respiratory symptoms after a road-side application had been made about one mile away. They could smell the chemicals and both sought medical care. Herbicide/algicide: Glyphosate, isopropylamine salt, Dimethylamine 2,4-dichlorophenoxyacetate, Dicamba, diglycoamine salt 1 Possible severity: Low/Mild 1 Insufficient Information
County	05/11/2005	A 58-year-old female homeowner was sitting on her porch when she observed a truck spraying weeds. She could smell the products and then had GI, respiratory, ocular and dermal symptoms. She sought medical care that day. WSDA took samples one week after the application was made. They were negative. Herbicide/algicide: Dicamba, diglycoamine salt, 1 Possible severity Low/Mild
DOT	07/05/2005	A 49-year-old male Department of Transportation employee had neurological respiratory, and gastrointestinal symptoms after inhaling vapors from a road side herbicide application. He did not feel the pesticide but he said that he inhaled the vapors. He was the driver for the crew and he parked downwind from the application. He sought medical care the same day.

Herbicide/algicide: Dimethylamine 2,4-dichlorophenoxyacetate; Dicamba, dimethylamine salt, Metsulfuron-methyl, Picloram, potassium salt
1 Possible
severity Low/Mild

Other Roadside Incidents - Department of Health

Applicator	Date	Incident Description
Ecology	05/01/2000	An adult male was applying herbicide to knapweed when his spray nozzle became plugged. When he attempted to clear the nozzle, the gun discharged and he received several drops of the chemical in his mouth. He was wearing all required personal protective equipment. He washed and rinsed his mouth for several minutes, then went to the emergency room for decontamination and treatment of mild symptoms. Herbicide/algicide: Clopyralid, monoethanolamine salt 1 Definite severity: Low/Mild Department of Ecology Employee - Unlicensed, tree planter - Site is road, rail or utility right of way, but narrative says spraying in an orchard
City	07/03/2001	A 45-year-old male pesticide technician was applying an herbicide mix when the pressurized spray line ruptured spraying him in the face. He rinsed with water, but developed ocular symptoms and sought treatment. Herbicide: Glyphosate; 2,4-D; Triclopyr 1 Possible severity: Low/Mild City of Tacoma employee spraying near a railroad – city right of way – target is weeds and vegetation.
Lic. Applicator	07/06/2001	A 34-year-old male warehouse worker pulled weeds without gloves. The roadside and fence areas had been sprayed with pesticides earlier that day. A few days later he developed skin problems. He sought medical treatment. Herbicide: Fluroxypyr; 2,4-D; Dicamba; Diflufenzopyr 1 Probable severity: Low/Mild 3 Possible severity: (3) Low/Mild A chemical plant employee/licensed applicator applied mix of chemicals around roadside and around a fence. (Does not specify whether it was chemical plant roadside or public)…another employee was exposed to the spray residue while pulling weeds.
Lic. Applicator	07/15/2002	A family of three (ages 73, 47, and 25) developed ocular, dermal and respiratory symptoms after they smelled herbicides in front of their home. They did not seek medical treatment. WSDA tests were negative and could not confirm pesticide drift. Herbicide/algicide: Picloram, potassium salt, Dimethylamine 2,4-dichlorophenoxyacetate; Diethanolamine (2,4-dichlorophenoxy)acetate, Dicamba, dimethylamine salt; MCPA, dimethylamine salt 2 Possible severity: (2) Low/Mild 1 Insufficient Information severity: Licensed applicator – roadside weed application -
Mosquito control district	07/21/2003	A group of friends developed various neurological and respiratory symptoms after a mosquito control operation close to where they were gathered. Two individuals sought medical treatment. WSDA samples were positive from adjacent areas and from the shirt of one person. Insecticide (excluding solely IGR and fumigants): Malathion (ANSI), Pyrethrins; Piperonyl butoxide, Piperonyl butoxide; Permethrin, mixed cis,trans (ANSI), Piperonyl butoxide; Phenothrin, D- 1 Probable severity: Moderate 3 Possible severity: (3) Low/Mild
Not licensed	07/15/2005	A 34-year-old female parks department employee climbed into the back of a truck on the way to

		another job site. Her co-worker had climbed in first. The spray wand of his back pack sprayer caught on her clothing and sprayed her in the face and mouth. An hour later she went back to the shop, flushed her face and then sought medical attention at a walk-in clinic. She experienced brief upper respiratory irritation. Herbicide/algicide: Glyphosate, isopropylamine salt 1 Possible severity Low/Mild Employed by City of Stanwood - Unlicensed applicator - Event took place in truck in front of a fire station – no further info
Mosquito control district	08/05/2005	A 27-year-old male and 23-year-old female riding motorcycles were exposed by a truck misting/cold fogging for mosquito control. While attempting to determine which product they had been exposed to, a 55-year-old male friend arrived. Shortly thereafter a second mosquito control vehicle arrived and had not turned off his equipment, again exposing the two plus the third person. All three reported symptoms but none sought medical treatment. WSDA investigated the incident. Insecticide (excluding solely IGR and fumigants): Naled (ANSI) 3 Possible severity (3) Low/Mild

Attachment: Summary of 2000 -2007 DOH and WSDA Roadside Pesticide Complaints Department of Agriculture

Case/County	Date/Complaint	Incident Description
Year 2000		
004C Chelan	1999 Drift	In July of 1999, complainant noticed corkscrewing of new growth and spindly shoots with no terminal bud in the first row of his De Anjou pear trees. He also noticed some damage to his apple trees in the first row, decided it was herbicide damage, and contacted County Public Works. Complainant claimed $264,000 of damage to his fruit trees because of alleged infractor's herbicide applications. 12 samples were taken and the WSDA Lab analyzed for phenoxies, glyphosate, pendimethalin, and diuron. The complainant withdrew his complaint before the final results from the lab were in. The case was closed on 5/5/2000.
014C Grant	Spring 2000 Drift	Alleged runoff from roadside right of way herbicide applications injured wheat. Runoff and possibly frost from state and county ROW applications, plus runoff and possibly drift from herbicide applications by the grower, may have damaged a wheat field. Bromacil, diuron, and imazapyr detected in the wheat. Bromacil was applied to the freeway and a pump near wheat. Diuron was applied to the freeway and county road. Imazapyr was applied to the county road. Records furnished were incomplete. Final Action: Notice of Correction.
020C Grant	5/1/2000 Drift	Injury to potatoes allegedly caused by drift from roadside right of way herbicide application. The WSDA lab found residues of imazapyr, diuron, and 2,4-D in samples collected from a potato field and roadside right of way. The owner of the potatoes applied Sahara the previous fall where it may have run off into the potato field. A roadside right of way application with 2,4-D also may have drifted into the potato field. Records from the roadside application were incomplete and not submitted on an approved form. Final Action: Notice of Correction.
040C Okanogan	2000 Drift	Complainant noticed in July 1999 what he thought was herbicide damage to his orchards. When County Public Works Department failed to take responsibility for the damage ($264,000), he contacted WSDA on 3/01/00 a case was started, then closed at the request of the complainant 5/5/00 after he received initial results from the lab. New case opened on 9/6/00 at request of complainant's attorney. The alleged infractor admitted to applying diuron and glyphosate but not picloram in the episode area. WSDA found detectable quantities of glyphosate, AMPA, and diuron in the leaf samples. A commercial lab found picloram in the leaf samples extracted and submitted by the complaint. Final Action: Administrative Action

005S 2000 Stevens Drift — Alleged drift from ROW onto property and person. Evidence was found that the alleged infractor drifted off the right of way application into the open area between the two roads uphill from the complainant's home, but not on the complainant's property. Herbicide: Diuron. Final Action: Notice of Correction issued.

17S Spring 2000 Adams Run-off — Alleged herbicide runoff into several wheat fields from a right of way application made by WSDOT. WSDOT applied herbicide in such a manner as to enable it to be washed into areas outside of the WSDOT right of way where it could contact the roots of desirable plants (wheat & barley). Herbicide: Sulfonylurea Urea. Notice of Correction issued.

025S 8/8/2000 Whitman Drift — Alleged that right of way application of herbicides performed by WSDOT may have damaged residential ornamental and garden plants. Both parties applied glyphosate in the vicinity of the affected plants observed on the complainant's property. Disease and insect damage was observed on the complainant's plants. Glyphosate-only residue detected in ROW near complainant's property. Restricted-Use Pesticides applied on PSI over 25. Final Action: Notice of Correction.

026T 3/1/2000 Skagit Drift — Allegation that Skagit County Roadside application damaged a customer's beet seed crop. There was visual evidence of damage to emerging spoilage of the beets. The pattern of damage was not consistent with drift, over spray, runoff, or leaching from a nearby application. Soil and beet bulb samples taken. All samples residue negative. Final Action: No Action Indicated.

027T 8/1/1999 Skamania Human Exposure — Referring party (Health) states that the damaged party is suffering from medical problems as a result of pesticide applications made to utility right of way property. Aggrieved party states he has recurring allergies that may be caused by pesticide applications that occurred in 1999. The WSDA does not have sufficient data or information to substantiate the allegation that a pesticide application resulted in off side movement, contamination of water supplies, or residual materials on plants in a right of way, or was the cause of illness or injury. Herbicide: Glyphosate. Final Action: No Action Indicated.

049T 3/1/2000 Skagit Drift — Complainant alleged that county roadside application damaged spinach seed crop. Samples collected from the field did not show any detectable residue of the materials used in the roadside application. No plant growth problems were observed as a result of other applications by commercial applicators. No further activity is recommended for this case. Final Action: No Action Indicated.

055T 6/3/2000 Pierce Drift — Complainant alleges that damage to plants was caused by drift from roadside spray. Chemical analysis of samples and other evidence did not show that company made a right of way application in a manner that caused damage or injury to the complainant's property. The chemical application record did not list all of the WSDA required items. Herbicide: Glyphosate. Final Action: No Action Indicated.

027Y 5/15/2000 Yakima Drift — Homeowner complained about county weed control causing spray damage to 100 of his arborvitae trees planted along abandoned railroad right of way. The trees showed browning on the lower needles. Samples were sent for testing. Homeowner did not see the spraying. Test results show no pesticide residue from Dicamba or 2,4-D on the arborvitae. Target Plants (thistle) showed residue of both Dicamba and 2,4-D. Final Action: No Action Indicated.

Year 2001

C016 6/13/2001 Douglas Direct Application — WSDA investigator observed overspray from ROW to orchard. Portion of the orchard was planted within the right-of-way. Herbicide label was not followed and records inaccurate.

Herbicides: 2,4-D and metsulfron methyl. Final Action: Notice of Correction.

C027 6/29/2001 Douglas Drift — Allegedly contaminated property by application made to the canal right of way. Verified by residue. Herbicide drifted onto a dog kennel and outside the canal's right of way. Product labeled for water but applicator did not have aquatic permit. Record-keeping errors. Herbicide: Glyphosate. Final Action: Notice of Correction.

S024 8/2/2001 Adams Drift — Alleged that the county Public Works Department may have damaged his Austrian willow trees by applying glyphosate and 2,4-D to a ROW. Complainant was asking WSDA to look at the matter. Verified. Pesticide application linked to the observed damage. Only application made in the area. Affected plants were not completely confined to a right-of-way area. Records were incomplete. Final Action: Notice of Correction.

S029 8/28/2001 Grant Drift — Alleges that drift from ROW application damaged wild flowers. Is now concerned about their trees. Damage could be linked to pesticides. Pesticide effects limited to ROW area. Herbicide: 2,4-D and MSMA. Final Action: No Action Indicated.

T020 4/4/2001 Island Human Exposure — Individuals on the pesticide sensitive register were not notified prior to roadside application. ROW application drifted and several people felt ill. No evidence of drift, all persons on the pesticide sensitive register were notified. Miscellaneous herbicides. Final Action: Notice of Correction issued for not having telephone number on spray truck.

T070 7/19/2001 Island Human — Complainant felt ill after driving on road after a ROW application of clopyralid and 2,4-D. No evidence of exposure. Was notified as a courtesy. No Action Indicated.

Y012 6/7/2001 Klickitat Drift — Concerned about damage to grapes from ROW application. No evidence that symptoms on grapes were caused by pesticides. Herbicide: 2,4-D. No Action Indicated.

Y019 6/7/2001 Klickitat Drift — Herbicide symptoms in vineyard following ROW application by DOT. Symptoms were present prior to application. Herbicide: 2,4-D. No residue found in adjacent area. No Action Indicated.

Y029 6/13/2001 Klickitat Drift — Application to weeds and blackberries drifted into pears. Damage estimate is $6,750.00. Application made without licensed person on site. Evidence of drift. Herbicide: triclopyr. Records incomplete. Final Action: Notice of Intent.

Y035 7/13/2001 Yakima Misuse — WSDA observed an application of phenoxy-type herbicide in excessive heat. WSDA recorded the temperature at 91 degrees F at 3:57 PM. Application was stopped when WSDA informed the alleged infractor that there was an 85 degree cut off. Herbicide: 2,4-D. Final Action: Verbal Warning.

Year 2002

S030 Unknown Spokane Drift — Pesticides applied by DOT damaged his *arbor vitae* screen. Pesticides detected, not DOT products. Source unknown. Also trees may be dying from drought. Pesticides: Several. Final Action: No Action Indicated.

S032 7/15/2002 Spokane Human Exposure — ROW application drifted to home and was inhaled by complainant, daughter and mother. Taste in mouths and noses caused irritation. No detections in area or house. No violations found. Unable to determine drift or exposure. Herbicides: 2,4-D, MCPA, dicamba. Final Action: No Action Indicated.

S039 8/1/2002 Spokane Drift — ROW application damaged garden plants. Damage due to frost, not pesticides. Herbicides: None. Final Action: No Action Indicated.

T095 5/28/2002 King Water Contamination — Application made that entered water in ditch. Trespass by applicator caused injury to plants. Complainant failed to return calls or provide further information. Case was dropped. Final Action: No Action Indicated.

Y025 6/4/2002 WallaWalla Drift — Possible drift from ROW application to vineyard. Sample tested negative for products used in ROW application. Slight detect of product used by grower in own vineyard. Herbicides: glyphosate. Final Action: No Action Indicated.

Year 2003

C023 5/20/2003 Okanogan Drift — Possible drift from ROW application onto grapes. One sample with residue, no other samples had residue. Road area skipped by grapes. Herbicides: 2,4-D and Dicamba. Final Action: No Action Indicated.

C035 8/29/2003 Okanogan Direct — Said ROW spray damaged his trees and vegetation in no spray zone. County applied on roadside but stopped before marked zone. No residue detected. Trees have drought injury and insects. Herbicides: No. No recordkeeping problems. Final Action: No Action Indicated.

S011 April 2003 Stevens Direct — DOT tree and weed control on adjacent lot suspected to cause tree injury. Diuron found in needles. Roots possibly contacted pesticide but three years elapsed and no source for 2,4-D. Herbicides: diuron, bromacil, 2,4-D. DOT working with homeowner on tree replacement. Final Action: Warning Letter.

S015 5/30/2003 Stevens Direct- Water — ROW applied too close to aquatic areas. Did not witness application. No residue found, no violations verified. Herbicides: 2,4-D and chlorsulfuron. Final Actions: No Action Indicated.

S027 6/17/2003 Spokane Human Exposure/Drift — Exposed to pesticides and had asthma attack driving behind county spray truck making ROW application. Incident happened 43 days before complaint was filed. No samples could be obtained. No health documentation received from complaint. Herbicide: metsulfuron methyl and dicamba. Final Action: No Action Indicated.

S029 2003 Asotin Drift to Water — County applying pesticides on ROW too close to water, products leaching. Verified drift, possible water contamination, and incomplete records. Herbicides: Miscellaneous. Final Action: Notice of Correction.

S032 July, 2003 Adams Drift — Herbicide drifted to his lawn and trees from alley application. Trees and lawn stressed by poor growing conditions. Residue found in birch leaves. Records incomplete. Herbicides: 2,4-D, dicamba, glyphosate. Final Action: Notice of Correction.

T046 6/25/2003 Pierce Human Exposure — Complainant said she had headache and children stomach aches after ROW application drifted. No residue detected. May be odor problem. Herbicides: diuron, glyphosate, Chlorsulfuron. Final Action: No Action Indicated.

T087 10/7/2003 Clallam Human Exposure — Person allegedly ill from ROW application that entered car. No evidence of residue in car or person. No evidence of drift. Possible odor only. Herbicide: dicamba. Final Action: No Action Indicated.

Y008 5/20/2003 Klickitat Drift — ROW spray drifted and damaged trees and lilacs. No evidence of drift, damage due to drought and frost. Herbicide: None. Final Action: No Action Indicated.

Y009 4/28/2003 Franklin Water Contamination — Application of paraquat on ditch banks polluted water. Application entered water, records insufficient. Final Action: Notice of Correction.

Y025 7/16/2003 — Application to ROW damaged grapes. No residue found, no source for damage found. Advisory

Yakima Drift on DOT recordkeeping. Herbicides: None. Final Action: Advisory Letter.

Year 2004

C005 6/25/2004 Trees being killed by pesticides. / No pesticides applied in area. Probably cause from deicer
Okanogan Drift to trees used on road. Herbicides: None. Final Action: No Action Indicated.

G007 7/31/2004 Potatoes next to irrigation district showing phenoxy symptoms. Bean fields in area with
Grant Drift to crops symptoms also. Verified, no ROW on Public Operator license. Herbicides: 2,4-D and dicamba.
Final Action: Notice of Intent.

G008 7/12/2004 Beans next to irrigation district showing phenoxy symptoms. No source of residue found.
Grant Drift to crops Symptoms were mainly mite damage. Dropped complaint. Herbicides: 2,4-D. Final Action:
No Action Indicated.

S021 Spring 2004 Alleged ROW drift of herbicide to winter wheat. Damage to wheat seen along road but no cause
Adams Drift to crops determined. No residues detected. Herbicide: Unknown. Final Action: No Action Indicated.

S026 4/15/2004 ROW application be country damaged locust trees on his property. Glyphosate residue found, no
Spokane Drift to trees source determined. Off label use of picloram (near trees). Final Action: Notice of Correction.

Y020 April 2004 Roadside spraying damaged wheat. Wheat was growing in right of way. County working with
Franklin Drift to crops growers to resolve. Complaint dropped. Herbicide: Unknown. Final Action: No Action
Indicated.

Y027 5/20/2004 Application made to ditch bank and across road drifted to nearby home and damaged tree and
Franklin Drift to plants ornamentals. Verified. Also records incomplete. Herbicides: dicamba, 2,4-D, and glyphosate.
Final Action: Notice of Correction.

Y028 5/25/2004 Cherry tree with brown leaves. Thought to be cause by ROW spray. Nutrition and drainage
Klickitat Drift to trees problems, not pesticide related. Last application on ROW was 2003. Herbicides: None. Final
Action: No Action Indicated.

Y033 7/16/2004 Alleged the county sprayed mail and mailbox. Concerned about exposure. Verified, residue
Yakima Direct application detected. Herbicide: glyphosate. Final Action: Notice of Correction.

Year 2005

C014 5/10/2005 Herbicide sprayed on roads and rights of way drifted and damaged onion field. General use
Grant Drift to Crop products applied. No residue found but damage may be due to carry over from earlier
applications. Herbicide: Unknown. Final Action: No Action Indicated.

S018 5/11/2005 Person ill from drift of pesticide. Went to emergency room. No evidence drift occurred. Doctor
Spokane Human Exposure – Drift report said exposure unlikely. Product has strong smell. Herbicide: dicamba.
Final Action: No Action Indicated.

S020 Spring 2005 Drift from ROW to lentil field damaged crop. No evidence of drift. Damage may be due to
Spokane Drift to crop flooding. Herbicide: 2,4-D and picloram. Final Action: No Action Indicated.

S035 Spring 2005 DOT damaged trees with ROW applications. Residue detected from plants. Probably drift of
Asotin Drift – trees diuron, glyphosate - source undetermined. Final Action: Notice of Correction.

S038 Before 2005 Application along road damaged trees. Verified. Off-label use near the roots of desirable trees.
Spokane Drift to Crop Herbicide: bromacil and diuron. Final Action: Notice of Intent.

T053 7/12/2005 DOT ROW spray damaged grape vines. Symptoms seen, residue not detected.
Cowlitz Drift on organic grapes. Herbicides: triclopyr and 2,4-D. Final Action: Verbal Warning.

Y006 Spring 2005 Complaint said product drifted to his onions from either application to wheat or to ROW. All
Walla Walla Drift to Crop samples tested negative. Application records from farmer were incomplete. Herbicides:
Miscellaneous. Final Action: Notice of Correction.

Y018 June 5, 2005 ROW application along ditch damaged ornamentals. Property line dispute. Herbicide: 2,4-D and
Yakima Drift to ornamentals glyphosate. Final Action: Notice Of Correction on off-label use.

Year 2006

33-06 4/12/2006 Commercial application drifted into creek. Not verified, no damage or residue found. Herbicides:
Pierce Drift to water glyphosate, sulfonyl urea, chlorsulfuron. Final Action: No Action Indicated.

43-06 3/1/2006 Commercial ROW application entered Carbon River. Damaged plants (blackberries) in area
Pierce Drift to water suggested that application entered water. Herbicides: miscellaneous. No responsible person
found. Final Action: No Action Indicated.

46-06 5/1/2006 Odor from ROW applications bothers her. No evidence of drift, complaint mostly about odor.
Stevens Drift to property Reached agreement with county to post no-spray signs on both sides of road.
Herbicides: 2,4-D. Final Action: No Action Indicated.

62-06 5/10/2006 Complainent alleged that roadside application damaged plants. Could not verify, no residues
Spokane Drift to property found. May be frost damage. Herbicides: sulfuron methyl, glyphosate, sulfentrozone.
Final Action: No Action Indicated.

65-06 5/3/2006 Complainent alleged that Right of Way application moved to pear orchard. Lack of rainfall did not
Okanogan Drift to crops adhere pesticide to soil. Herbicide: miscellaneous. Label directions followed. Final
Action: no violation. No Action Indicated.

72-06 5/16/2006 Concerned that railroad ROW applications harming native trees and getting into water. No
Spokane Misuse-direct evidence found of misuse. Aspen tree defoliation from natural causes. Herbicides:
Miscellaneous. Final Action: No Action Indicated.

113-06 6/12/2006 Complaint that application to roadside went into water. Overspray into ditch that may have had
Skagit Direct to water flowing water confirmed by residue. Applicator did take precautions in area. Herbicide:
2,4-D. Final Action: Advisory Letter.

119-06 6/7/2006 Alleged herbicide application to ROW caused rash when he mowed 20 hours later. No warning so
Lincoln Human Exposure he did not wear PPE. Could not connect application to rash. No label violations.
Applicator said person watched him spray. Herbicide: triclopyr, clopyralid. Final Action: No
Action Indicated.

144-06 5/15/2006 Drift from a ROW application allegedly damaged pears. Application made Nov 2005, parties
Yakima Drift to organic crop unable to resolve. WSDA could not determine correlation between symptoms and
applications in area. Herbicides: Unknown. Final Action: No Action Indicated.

149-06 2/24/2006 ROW application killed aspen tree. Verified. Foliage sample tested positive. Herbicide: diuron
Franklin Drift to trees and 2,4-D. Final Action: Notice of Intent and Notice of Correction regarding records and
improper license.

152-06 Spring 2006 ROW application drifted to plants. No evidence of drift seen. Herbicide: Not available. Final

Asotin Drift to tree Action: No Action Indicated.

Year 2007

59-07 5/1/2007 County right of way spray drifted and damaged his ornamentals. Residue of glyphosate and
Cowlitz Drift to Ornamentals diuron found. Could not determine source. Source probably not county spray. Herbicide:
Glyphosate and diuron. Final Action: No Action Indicated.

60-07 5/8/2007 DOT ROW application drifted and damaged grapes. Majority of damage caused by vineyard's
Grant Drift to crop own applications to control suckers. Herbicide: oxyfluorfen, paraquat, bromoxynil. Final Action:
Notice of Correction regarding applying a Restricted-Use Pesticide without proper license and
sale of Restricted-Use Pesticide without license.

102-07 6/26/2007 Drift from Right of Way. DOT application to trees on property. Verified by residue. Herbicides:
Grant Drift to property 2,4-D and diuron. Final Action: Notice of Correction.

110-07 6/22/2007 ROW spray drifted and damaged plants. Verified plant damage. Residues within county ROW
Cowlitz Mis-use easement. Source undetermined. Herbicides: glyphosate, flumioxazin, chlorsulfuron. Final
Action: Advisory letter.

118-07 3/15/2007 Herbicide damage to Wild Rye seed crop from drift. Verified. Extensive damage more than.
Lincoln Drift to crop $1,000. Applicator applied in gusty winds. Herbicides: diuron and sulfuron methyl. Final Action:
Notice of Intent.

129-07 7/16/2007 Applying pesticides to a roadside without warning signs and tank not labeled. Product being
Island Mis-use applied was a compost tea. Not a pesticide. Herbicide: Not applicable. Final Action: No Action
Indicated.

131-07 6/10/2007 ROW application made in a manner that contaminated water. Referral from DOE 20 days after
Chelan Water contamination spraying. No violations seen. Rates and area on labels. Herbicides: MCPA, metsulfuron
methyl, Glyphosate. Final Action: No Action Indicated.

134-07 7/26/2007 Referral from DOE. Person said that ROW spray causing swollen eyes. Gave her information
Benton Human exposure about chemical sensitive list. Complaint withdrawn. Herbicides: Unknown. Final action:
No Action Indicated.

136-07 8/2/2007 Failed to notify. Complainent is on pesticide sensitive list. Verified. Herbicide: glyphosate and
Grant Notification fluroxypyr. Did not have proper category of license. Final Action: Notice of Correction.

149-07 1998 Utility company caused decline of maple tree. No evidence decline due to application. Probably
Spokane Mis-use cultural and insects. Herbicides: not available. Final Action: No Action Indicated.

154-07 7/9/2007 Application by county roadside damaged corn for silage. Verified. Probably due to inversions.
Whatcom. Drift to Crop County paid for damage. Herbicides: Sulfometuron and glyphosate. Final Action:
Verbal Warning.

Appendix G
2008 PIRT Panel Activities

2008 PIRT Panel Activities

The PIRT Annual Report summarizes the activities of the PIRT Review Panel for 2008.

Issue	PIRT Activity
Pesticide-Related Legislation	PIRT monitored the following 2008 legislation: • House Bill 1806, creating a model Integrated Pest Management policy. PIRT wrote a letter supporting the concept of requiring school implementation of integrated pest management policies (Appendix F). • House Bill 2429, establishing a work group to study the roadside application of pesticides.
Pesticides in Roadside Vegetation Management	• Ray Willard (Department of Transportation) spoke about the department's roadside vegetation management policy. • Paul Figueroa (WSDA) presented on "Survey of Forestry and Rights of Way Compliance Issues." • Patrick Soderberg (Thurston County Health Department) spoke about Thurston County's roadside vegetation management policy. • The coordinator surveyed Washington county public works departments for information on their use of pesticides for roadside vegetation control. • Sean MacDougall (Pierce County Noxious Weed Control Board) spoke about issues in controlling invasive species. • In response to a request for information on pesticides in roadside vegetation management from Representative Campbell, a PIRT subcommittee wrote a letter on PIRT's investigation of roadside spraying (Appendix F) and met with Paul Figueroa on inspections and investigations related to forestry roadside management.
Pesticide Use Reporting (PUR)	• In response to a request for information on pesticide use reporting from Representative Campbell, PIRT formed a subcommittee to research PUR systems in other states and develop recommendations for a Washington

	PUR system.
West Nile Virus (WNV)	• Kevin Shoemaker (Benton County Mosquito Control District) presented on the district's mosquito monitoring and control activities. • Liz Dykstra (Health) presented on 2008 WNV activities, Washington cases and emergency response to a potential WNV outbreak. • Kelly McLain (Ecology) gave regular updates on WNV collaboration between multiple agencies.
Reappointment and Recruitment of PIRT Toxicologist	• PIRT formed a subcommittee to review applications and interview toxicologist candidates. • PIRT wrote letters to the Governor's Office recommending the reappointment of Steve Gilbert, and later recommending Karl Arne, as toxicologist. (Appendix F)
Streamlining the PIRT Report	• PIRT a sent preliminary report on 2006 Health data with transmittal letter to the Legislature (Appendix F). • A subcommittee met with Health upper management to identify ways to streamline the PIRT report writing and review process.
Yakima PIRT Meetings	PIRT held two meetings in Yakima that were planned specifically for the agricultural community, including farm workers and growers. Simultaneous interpretation in Spanish was available and there was extended public comment time. At the April meeting: • Kevin Shoemaker (Benton County Mosquito District) presented on the district's mosquito control activities. • Dr. Matthew Keifer (UW) spoke about recognized long term health effects of pesticide exposure. • Ofelio Borges (WSDA) presented on "Collaboration in Providing Pesticide Safety Trainings for the Agricultural Industry." • Dr. Vincent Hebert (WSU) presented on his air monitoring research for the presence of methyl isothiocyanate in south Franklin County.

	At the November meeting: • Dr. Anneclaire De Roos (Fred Hutchinson Cancer Research Center) presented on long term health effects of pesticide exposure. • Jorge Lobos (WSDA) presented on pesticide applicator training. • PIRT held a panel discussion with a local physician and a former farm worker on underreporting of pesticide illness and invited public comment.
School Pesticides	• Cliff Weed (WSDA) presented on school pesticide use.
Pesticide Air Monitoring	• PIRT received frequent updates from Dr. Richard Fenske (UW) and Dr. Vincent Hebert (WSU) on their respective pesticide air monitoring research. • Dr. Hebert presented information on his research on air monitoring for methyl isothiocyanate (MITC) in south Franklin County at the April Yakima meeting. • Dr. Hebert and Barbara Morrissey (Health) summarized the EPA reregistration eligibility decision for metam sodium.
Cholinesterase Monitoring	• Pam Edwards (L&I) gave regular updates on the cholinesterase monitoring program.
Worker Protection Standard and Outreach	• Ofelio Borges (WSDA) presented on "Collaboration in Providing Pesticide Safety Trainings for the Agricultural Industry. • WSDA pesticide licensing recertification credits were available to November PIRT meeting attendees. • Jorge Lobos (WSDA) spoke on certification and education of pesticide applicators. • Helen Murphy (Pacific Northwest Agricultural Safety and Health Center) presented on "Outreach: Audience Research - Targeted Outreach - Recommended Strategies for Evaluation."
NIOSH Prevention/ Problem Pesticide Labels	• Barbara Morrissey presented on "PIRT Action Item: Identifying Problem Pesticide Labels." • Dr. Geoffrey Calvert, (NIOSH) presented on the

	Sentinel Event Notification System for Occupational Risk pesticide poisoning surveillance program. • Ann Wick (WSDA) and Barbara Morrissey collaborated on a letter of recommendations to EPA for improvements to labeling and packaging of foggers. (Appendix F)

Recommendations to the PIRT Review Panel and Member Agencies for 2008

PIRT adopted the following recommendations in 2008 for Panel action and member agency action. PIRT Panel members implement these recommendations through their respective agencies and organizations, collaborative efforts, subcommittee work, and at PIRT meetings.

Recommendation 1	*PIRT Review Panel and member agencies will continue to report on actions taken in response to findings from Health investigators into under-reporting of pesticide-related illnesses.*
Recommendation 2	*DOH will provide updates to PIRT on activities related to the NIOSH funded* project "Identifying Preventable Causes of Pesticide-R*elated Illness among Agricultural Workers."*
Recommendation 3	*PIRT will obtain and review data from WSDA and other sources to evaluate Washington Schools' compliance with tracking and pesticide usage requirements, including requirements pertaining to 1) central collection of annual pesticide use reports, and 2) dissemination of information about tracking requirements and tracking tools to school districts.*

Recommendation 4	*PIRT will collaboratively communicate with other entities on strategies to reduce pesticide incidents.*
Recommendation 5	*PIRT will continue to review the activities of the medical monitoring program for agricultural workers who handle cholinesterase-inhibiting insecticides.*
Recommendation 6	*PIRT will continue to monitor for any increase in pesticide incidents related to control of mosquitoes.*
Recommendation 7	*PIRT members will continue to report on possible instances of unclear labeling of pesticide products. WSDA will clarify or forward unclear federal labels to EPA for response.*
Recommendation 8	*PIRT will encourage its member agencies to seek information directly from agricultural laborers and producers concerning under-reporting of pesticide-related illness, and identifying causes of pesticide-related illness among agricultural workers.*

Conclusion

The PIRT Review Panel met 12 times in 2008. The Panel monitored each agency's response time to incidents and monitored actions stemming from recommendations made in previous years. The Panel also analyzed incident data to identify trends and patterns of problems related to pesticides, and responded to requests for special activities from the panel members.