

**Illnesses and Injuries Reported by California Physicians<sup>1</sup> Associated With<sup>2</sup>  
Pesticide Exposure Summarized by Pesticide(s) and Type of Illness  
2011**

Pesticide <sup>3</sup>	Systemic/ Respiratory <sup>4</sup>		Topical <sup>4</sup>		TOTAL	
	Definite/ Probable	Possible	Definite/ Probable	Possible	Definite/ Probable	Possible
<b>Organophosphates</b>						
Acephate	1	0	0	0	1	0
Chlorpyrifos	3	3	0	0	3	3
DDVP	1	0	0	0	1	0
Diazinon	2	0	0	0	2	0
Malathion	1	1	1	1	2	2
Naled	0	1	0	0	0	1
Phosmet	0	1	0	1	0	2
<b>N-Methyl Carbamates</b>						
Propoxur	1	1	0	0	1	1
<b>Pyrethrins and Pyrethroids</b>						
Allethrin	1	1	0	0	1	1
Beta-Cyfluthrin	24	4	0	1	24	5
Bifenthrin	0	4	1	0	1	4
Cyfluthrin	2	0	0	0	2	0
Cyhalothrin	0	2	0	0	0	2
Cypermethrin	13	5	0	0	13	5
Deltamethrin	3	3	0	0	3	3
Esfenvalerate	2	1	1	1	3	2
Gamma-Cyhalothrin	2	0	0	0	2	0
Lambda-Cyhalothrin	7	3	2	1	9	4
Permethrin	3	0	1	1	4	1
Phenothrin	0	0	1	0	1	0
Pyrethrins	3	2	1	2	4	4
Resmethrin	1	0	0	0	1	0
Tetramethrin	1	0	0	0	1	0
<b>Organochlorines</b>						
Chlordane	0	2	0	0	0	2
<b>Other Pesticides</b>						
Abamectin	0	1	0	0	0	1

Adjuvant	0	0	2	0	2	0
Aluminum Phosphide	3	0	0	0	3	0
Bacillus Thuringiensis	1	1	0	0	1	1
Benfluralin	0	1	0	0	0	1
Boric Acid	8	4	0	0	8	4
Brodifacoum	2	1	0	0	2	1
Bromethalin	0	1	0	0	0	1
Bromine	1	0	0	0	1	0
Calcium Hydroxide	0	0	1	0	1	0
Calcium Hypochlorite	9	0	5	0	14	0
Chlorfenapyr	0	1	0	0	0	1
Chlorhexidine Diacetate	0	0	1	1	1	1
Chlorine	5	0	1	1	6	1
Chlorine Dioxide	1	0	1	0	2	0
Chlorothalonil	0	0	0	1	0	1
Combinations of Antimicrobials	103	2	16	4	119	6
Combinations of Fumigants	30	1	4	0	34	1
Combinations of Fungicides	22	2	4	0	26	2
Combinations of Herbicides	10	5	6	2	16	7
Combinations of Insecticides Including ChE Inhibitor(s)	35	8	2	2	37	10
Combinations of Insecticides Without ChE Inhibitor(s)	42	25	16	4	58	29
Copper	0	1	0	0	0	1
Copper Naphthenate	2	1	0	0	2	1
Copper Sulfate	1	0	1	0	2	0
Cyanuric Acid	8	0	5	1	13	1
Diatomaceous Earth	1	0	0	0	1	0
Dichlobenil	1	0	0	0	1	0
Dinoseb	0	0	1	0	1	0
Dinotefuran	0	1	0	0	0	1
Diquat	1	0	0	0	1	0
Fipronil	1	0	1	0	2	0
Gibberellic Acid	0	1	0	0	0	1
Glutaraldehyde	3	0	4	0	7	0
Glyphosate	3	4	3	2	6	6
Halogenated Hydantoin	3	0	0	0	3	0
Hydramethylnon	1	0	0	0	1	0
Hydrogen Chloride	3	0	4	0	7	0
Imidacloprid	0	0	0	1	0	1
Isothiazoline Disinfectants	0	0	1	0	1	0

Lime-sulfur	1	0	0	0	1	0
Mandipropamid	0	0	1	0	1	0
Mefenoxam	1	0	0	0	1	0
Metaldehyde	1	1	1	0	2	1
Metam-sodium	3	1	10	1	13	2
Methyl Bromide	2	0	0	0	2	0
Miscellaneous Combinations	69	33	6	6	75	39
Myclobutanil	0	0	1	0	1	0
Neem Oil	1	1	0	0	1	1
OIL OF LEMONGRASS	0	0	1	0	1	0
Oxyfluorfen	0	3	0	0	0	3
Ozone	1	1	0	0	1	1
Para-Dichlorobenzene	1	0	0	0	1	0
Paraformaldehyde	7	0	0	0	7	0
Paraquat	1	0	0	2	1	2
Petroleum Oil	0	1	0	0	0	1
Phenolic Disinfectants	2	0	1	0	3	0
Phthalaldehyde	1	0	1	0	2	0
Pine Oil	1	0	0	0	1	0
Quaternary Ammonia	6	0	44	0	50	0
Sodium Chlorite	1	0	0	0	1	0
Sodium Hypochlorite	67	18	68	5	135	23
Spinosad	0	1	0	0	0	1
Sulfur	6	3	0	2	6	5
Sulfur Dioxide	2	0	1	0	3	0
Sulfuryl Fluoride	3	1	1	0	4	1
Thiamethoxam	0	1	0	0	0	1
Thiophanate-methyl	1	0	0	0	1	0
Triclopyr	0	0	0	1	0	1
Unknown Antimicrobials	10	3	7	0	17	3
Unknown Fungicides	1	0	0	0	1	0
Unknown Herbicides	1	1	2	1	3	2
Unknown Insecticides	17	29	5	4	22	33
Unknown Pesticides	3	7	0	0	3	7
<b>TOTAL</b>	<b>581</b>	<b>200</b>	<b>237</b>	<b>49</b>	<b>818</b>	<b>249</b>

**1 Source:** California Department of Pesticide Regulation, Pesticide Illness Surveillance Program.

**2 Associated With:** Includes cases classified as definitely, probably or possibly related to pesticide exposure.

**Definite :** High degree of correlation between pattern of exposure and resulting symptomatology. Requires both medical evidence (such as measured cholinesterase inhibition, positive allergy tests, characteristic signs observed by medical professional) and physical evidence of exposure (environmental and/or biological samples, exposure history) to support the conclusions.

**Probable :** Relatively high degree of correlation exists between the pattern of exposure and the resulting symptomatology. Either medical or physical evidence is inconclusive or unavailable.

**Possible :** Health effects correspond generally to the reported exposure, but evidence is not available to support a relationship.

**3 Type of Pesticide:** Type of pesticide based on functional class.

**Antimicrobials :** Pesticides used to kill or inactivate microbiological organisms (bacteria, viruses, etc.).

**Cholinesterase Inhibitors :** Pesticides known to inhibit the function of the cholinesterase enzyme.

**Other Pesticides :** Any pesticide that is not an antimicrobial or cholinesterase-inhibiting pesticide.

**4 Type of Illness:** Categorization of the type of symptoms experienced.

**Systemic :** Any health effects not limited to the respiratory, skin and/or eye. Cases involving multiple illness symptom types including systemic symptoms are included in the systemic category.

**Respiratory :** Health effects involving any part of the respiratory tree.

**Topical :** Health effects involving only the eyes and/or skin. This excludes outward physical signs (miosis and lacrimation) related to effects on internal bodily systems. These signs are classified under 'Systemic.'

**Asymptomatic :** Exposure occurred, but did not result in illness/injury. Cholinesterase depression without symptoms falls in this category.

**Whom to Contact:**

California Department of Pesticide Regulation  
Worker Health and Safety Branch  
Phone: (916) 445-4222  
Physical address: 1001 I St., Sacramento CA 95814-2828  
Mailing address: P.O. Box 4015, Sacramento, CA 95812-4015  
Fax: (916) 445-4280  
[www.cdpr.ca.gov](http://www.cdpr.ca.gov)

**About the Pesticide Illness Surveillance Program Data**

Pesticide-related illnesses have been tracked within the state of California for more than 50 years. The California Environmental Protection Agency, Department of Pesticide Regulation (DPR) maintains a surveillance program which records human health effects of pesticide exposure. The Pesticide Illness Surveillance Program (PISP) documents information on adverse effects from pesticide products, whether elicited by the active ingredients, inert ingredients, impurities, or breakdown products. This program maintains a database, which is utilized for evaluating the circumstances of pesticide exposures resulting in illness. This database is consulted regularly by staff who evaluate(s) the effectiveness of the DPR pesticide safety programs and recommend changes when appropriate.