

**Summary of Illness/Injury Incidents
Reported in California as Potentially Related to Pesticide Exposure
Summarized Statewide and by County of Occurrence¹
2006**

Relationship ²	TOTAL CASES	Type Of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/ Unknown	Agricultural	Non- Agricultural
TOTALS							
Definite	49	33	3	0	13	7	42
Probable	305	53	187	15	50	167	138
Possible	84	3	18	32	31	48	36
Unlikely	24	1	3	10	10	8	15
Asymptomatic	75	4	56	5	10	63	12
Unrelated	88	0	0	0	0	0	0
Insufficient	3	0	0	0	0	0	0
Unavailable	53	0	0	0	0	0	0
OVERALL⁵	681	94	267	62	114	293	243
COUNTY⁶							
ALAMEDA							
Probable	3	2	0	1	0	0	3
Possible	3	0	0	2	1	0	3
Unrelated	4	0	0	0	0	0	0
AMADOR							
Probable	1	0	0	1	0	0	1
BUTTE							
Probable	1	1	0	0	0	0	1
Possible	1	0	1	0	0	1	0
Unavailable	3	0	0	0	0	0	0
COLUSA							
Probable	1	1	0	0	0	0	1
Unrelated	1	0	0	0	0	0	0
CONTRA COSTA							
Probable	6	1	5	0	0	0	6
Unrelated	1	0	0	0	0	0	0
Unavailable	1	0	0	0	0	0	0
DEL NORTE							

Relationship ²	TOTAL CASES	Type Of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
Probable	3	2	0	0	1	0	3
Possible	1	0	0	0	1	1	0
Unrelated	1	0	0	0	0	0	0
Unavailable	1	0	0	0	0	0	0
EL DORADO							
Probable	18	0	0	0	18	0	18
Unrelated	1	0	0	0	0	0	0
FRESNO							
Definite	5	3	0	0	2	0	5
Probable	10	5	3	1	1	5	5
Possible	9	1	0	2	6	8	1
Unlikely	4	0	0	3	1	3	1
Asymptomatic	1	0	0	0	1	0	1
Unrelated	4	0	0	0	0	0	0
Unavailable	5	0	0	0	0	0	0
HUMBOLDT							
Probable	1	1	0	0	0	0	1
IMPERIAL							
Definite	1	0	0	0	1	0	1
Probable	3	2	1	0	0	2	1
Possible	1	0	0	1	0	1	0
Asymptomatic	1	1	0	0	0	1	0
KERN							
Definite	3	3	0	0	0	1	2
Probable	22	3	18	1	0	19	3
Possible	9	1	1	6	1	9	0
Unlikely	2	0	0	1	1	1	0
Asymptomatic	30	0	25	5	0	30	0
Unrelated	1	0	0	0	0	0	0
Unavailable	2	0	0	0	0	0	0
KINGS							
Definite	1	1	0	0	0	1	0
Probable	1	0	1	0	0	1	0
Unrelated	1	0	0	0	0	0	0

Relationship ²	TOTAL CASES	Type Of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
LOS ANGELES							
Definite	11	7	1	0	3	0	11
Probable	29	8	11	1	9	0	29
Possible	10	0	1	1	8	0	10
Unlikely	2	0	0	2	0	0	2
Asymptomatic	2	0	0	0	2	0	2
Unrelated	12	0	0	0	0	0	0
Insufficient	1	0	0	0	0	0	0
Unavailable	7	0	0	0	0	0	0
MADERA							
Probable	12	0	10	1	1	10	2
Unlikely	2	0	0	1	1	2	0
Asymptomatic	2	0	1	0	1	1	1
Unrelated	2	0	0	0	0	0	0
Unavailable	1	0	0	0	0	0	0
MARIN							
Definite	2	2	0	0	0	0	2
Unavailable	1	0	0	0	0	0	0
MENDOCINO							
Probable	2	0	0	0	2	2	0
MERCED							
Probable	15	3	12	0	0	14	1
Possible	3	0	0	1	2	2	1
Unrelated	2	0	0	0	0	0	0
MONTEREY							
Probable	10	1	6	3	0	9	1
Possible	4	0	2	2	0	4	0
Unlikely	1	0	1	0	0	1	0
Asymptomatic	3	0	2	0	1	2	1
Unrelated	2	0	0	0	0	0	0
Unavailable	1	0	0	0	0	0	0
NAPA							
Probable	1	0	0	1	0	0	1
ORANGE							

Relationship ²	TOTAL CASES	Type Of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
Definite	3	1	0	0	2	1	2
Probable	2	1	0	0	1	0	2
Possible	3	0	1	2	0	0	3
Unlikely	1	0	0	0	1	0	1
Asymptomatic	1	0	0	0	1	0	1
Unrelated	1	0	0	0	0	0	0
Unavailable	1	0	0	0	0	0	0
PLACER							
Unrelated	1	0	0	0	0	0	0
RIVERSIDE							
Definite	2	1	0	0	1	0	2
Probable	5	2	1	0	2	0	5
Possible	3	0	0	1	2	0	3
Unrelated	11	0	0	0	0	0	0
Insufficient	1	0	0	0	0	0	0
Unavailable	9	0	0	0	0	0	0
SACRAMENTO							
Probable	25	1	22	0	2	22	3
Possible	4	0	2	1	1	2	2
Unlikely	3	0	0	2	1	1	2
Asymptomatic	25	0	25	0	0	25	0
Unrelated	3	0	0	0	0	0	0
Unavailable	4	0	0	0	0	0	0
SAN BENITO							
Unavailable	1	0	0	0	0	0	0
SAN BERNARDINO							
Definite	2	2	0	0	0	0	2
Probable	58	5	52	0	1	51	7
Possible	2	1	1	0	0	0	2
Unlikely	1	0	0	1	0	0	1
Asymptomatic	2	0	0	0	2	0	2
Unrelated	2	0	0	0	0	0	0
Unavailable	2	0	0	0	0	0	0
SAN DIEGO							

Relationship ²	TOTAL CASES	Type Of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
Definite	4	2	0	0	2	0	4
Probable	7	2	3	1	1	1	6
Possible	7	0	2	3	2	4	3
Unlikely	1	0	0	0	1	0	1
Asymptomatic	1	0	0	0	1	0	1
Unrelated	9	0	0	0	0	0	0
Unavailable	3	0	0	0	0	0	0
SAN FRANCISCO							
Definite	1	1	0	0	0	0	1
Probable	3	0	3	0	0	0	3
Unrelated	2	0	0	0	0	0	0
Unavailable	1	0	0	0	0	0	0
SAN JOAQUIN							
Definite	2	1	1	0	0	0	2
Probable	6	3	2	1	0	1	5
Possible	6	0	0	1	5	3	3
Unlikely	1	0	0	0	1	0	1
Asymptomatic	3	2	0	0	1	1	2
Unrelated	3	0	0	0	0	0	0
Unavailable	3	0	0	0	0	0	0
SAN LUIS OBISPO							
Unrelated	2	0	0	0	0	0	0
SAN MATEO							
Probable	6	2	1	0	3	0	6
Possible	1	0	0	1	0	0	1
Unlikely	1	0	1	0	0	0	1
SANTA BARBARA							
Definite	4	2	1	0	1	2	2
Probable	9	0	9	0	0	9	0
Possible	1	0	0	1	0	1	0
Unlikely	1	0	0	0	1	0	1
Unrelated	3	0	0	0	0	0	0
Unavailable	2	0	0	0	0	0	0
SANTA CLARA							

Relationship ²	TOTAL CASES	Type Of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
Definite	3	3	0	0	0	0	3
Probable	6	4	0	0	2	0	6
Possible	3	0	0	2	1	0	3
Unlikely	1	0	1	0	0	0	1
Unrelated	10	0	0	0	0	0	0
Unavailable	1	0	0	0	0	0	0
SANTA CRUZ							
Possible	1	0	1	0	0	0	1
SISKIYOU							
Unrelated	1	0	0	0	0	0	0
SOLANO							
Unrelated	2	0	0	0	0	0	0
Unavailable	1	0	0	0	0	0	0
SONOMA							
Definite	1	0	0	0	1	1	0
Probable	2	0	0	2	0	0	2
Possible	2	0	0	2	0	2	0
Unlikely	2	0	0	0	2	0	2
Unrelated	1	0	0	0	0	0	0
STANISLAUS							
Definite	2	2	0	0	0	1	1
Probable	14	1	9	1	3	5	9
Asymptomatic	1	1	0	0	0	0	1
Unrelated	1	0	0	0	0	0	0
Unavailable	2	0	0	0	0	0	0
TEHAMA							
Unlikely	1	1	0	0	0	0	1
TULARE							
Definite	1	1	0	0	0	0	1
Probable	9	0	8	0	1	9	0
Possible	4	0	1	2	1	4	0
Unrelated	4	0	0	0	0	0	0
Unavailable	1	0	0	0	0	0	0
VENTURA							

Relationship ²	TOTAL CASES	Type Of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
Definite	1	1	0	0	0	0	1
Probable	8	1	7	0	0	7	1
Possible	6	0	5	1	0	6	0
Asymptomatic	3	0	3	0	0	3	0
Insufficient	1	0	0	0	0	0	0
YOLO							
Probable	6	1	3	0	2	0	6

1. **Source:** California Department of Pesticide Regulation, Pesticide Illness Surveillance Program.
The term “potentially related to pesticide exposure” refers to all cases reported to the program, some of which were later determined to be unrelated to pesticide exposure.

2. **Relationship:** Degree of correlation between pesticide exposure and resulting symptomatology.

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 : Some degree of correlation evident. Medical and physical evidence are inconclusive or unavailable.

Unlikely : A correlation cannot be ruled out absolutely. Medical and/or physical evidence suggest a cause other than pesticide exposure.

Indirect : Pesticide exposure is not responsible, but pesticide regulations or product label requirements contributed in some way, (e.g. heat stress while wearing chemical resistant clothing).

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

Unrelated : Definite evidence of cause other than pesticide exposure including exposures to chemicals other than pesticides. Since there is no exposure to pesticides, there are no entries under “Type of Exposure” or “Intended Use.”

Insufficient : The available information is inadequate to make an informed judgment on the relationship between pesticide exposure and the reported symptomatology. For submitted investigations, the investigator failed to make an adequate attempt to obtain the necessary information. Since a relationship to pesticide exposure cannot be

determined, there are no entries under “Type of Exposure” or “Intended Use.”

Unavailable : The available information is inadequate to make an informed judgement on the relationship between pesticide exposure and the reported symptomatology. For submitted investigations, the investigator made an adequate attempt to collect the necessary information, but was not able to do so (e.g., none of the parties concerned could be contacted). There usually needs to be more effort than to say the employee is not available for interview; other parties can often supply useful information. Since a relationship to pesticide exposure cannot be determined, there are no entries under “Type of Exposure” or “Intended Use.”

3. **Type of Exposure:** Characterization of how an individual came in contact with a pesticide.

Direct Contact : An appreciable amount of pesticide contacted the individual’s body surface. This includes: 1) sprays or squirts from application equipment; 2) leaks or spills whether or not related to the application; and 3) deliberate immersion (as when cleaning implements in a basin with antimicrobials). This excludes drift exposures.

Drift : Spray, mist, fumes, or odor carried from the target site by air. Drift must be related to an application or mix/load activity.

Residue : The part of a pesticide that remains in the environment for a period of time following an application or drift. This includes odor after the completion of an application.

Other/Unknown : Any of the following: 1) ingestion; 2) multiple routes of exposure; 3) residue from a spill; 4) exposure to smoke or pyrolytic products from a fire where pesticides are burning; 5) route of exposure is not known.

4. **Intended Use:** Agricultural/Non-Agricultural - Indicates whether the pesticide(s) were intended to contribute to the production of agricultural commodities.

Agricultural : The pesticide(s) were intended to contribute to the production of agricultural commodities, including livestock. This includes: 1) agricultural research facilities, 2) handling of raw agricultural commodities in packing houses, 3) drift from agricultural applications into non-agricultural areas, and 4) transportation and storage of pesticides on farm lands. It excludes forestry operations, although they are classified as agricultural for regulatory purposes. It also excludes manufacture, transportation, and storage of pesticides prior to arrival at the site of agricultural production.

Non-Agricultural : The pesticide(s) were not intended to contribute to the production of agricultural commodities. This includes: 1) residential pesticide uses, 2) structural pest control, 3) rights-of-way, 4) parks, 5) landscaped urban areas, and 6) manufacture, transportation and storage of pesticides except on farm lands.

5. This total includes one case in which the intended use could not be established as either agricultural or nonagricultural.

6. **County:** Individual counties in California where the incident occurred. If a county is not listed, there were no reported illnesses for that county for the year.

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

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.