

**Summary of Illness/Injury Incidents
Reported in California as Potentially Related to Pesticide Exposure
Summarized Statewide and by County of Occurrence¹
2003**

Relationship ²	TOTAL CASES	Type Of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/ Unknown	Agricultural	Non- Agricultural
TOTALS							
Definite	152	132	9	1	10	26	126
Probable	462	67	299	47	49	274	188
Possible	188	12	55	71	50	105	83
Unlikely	29	1	12	7	9	18	11
Asymptomatic	41	4	21	3	13	26	15
Unrelated	281						
Insufficient	2						
Unavailable	77						
OVERALL	1232	216	396	129	131	449	423
COUNTY⁵							
ALAMEDA							
Definite	3	3	0	0	0	0	3
Probable	10	0	2	0	8	0	10
Possible	3	0	1	2	0	0	3
Unrelated	3						
Unavailable	3						
AMADOR							
Probable	1	0	0	0	1	0	1
BUTTE							
Definite	2	2	0	0	0	0	2
Probable	3	2	1	0	0	0	3
Possible	1	1	0	0	0	0	1
Unlikely	1	1	0	0	0	0	1
Asymptomatic	1	1	0	0	0	1	0
Unrelated	1						
Unavailable	1						

Relationship ²	TOTAL CASES	Type Of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
Probable	1	1	0	0	0	1	0
Unrelated	3						
CONTRA COSTA							
Probable	4	4	0	0	0	0	4
Possible	2	0	0	0	2	1	1
Unrelated	1						
Unavailable	2						
DEL NORTE							
Definite	2	2	0	0	0	0	2
Probable	2	0	2	0	0	0	2
Possible	1	0	1	0	0	0	1
Unrelated	1						
EL DORADO							
Definite	3	2	0	1	0	1	2
Probable	2	0	2	0	0	1	1
Possible	4	2	2	0	0	0	4
FRESNO							
Definite	7	7	0	0	0	3	4
Probable	13	6	3	1	3	6	7
Possible	11	0	0	6	5	11	0
Unlikely	4	0	3	0	1	3	1
Unrelated	10						
Unavailable	1						
GLENN							
Definite	1	0	1	0	0	1	0
Probable	2	0	1	0	1	0	2
Possible	7	0	7	0	0	0	7
Unlikely	1	0	0	1	0	1	0
Asymptomatic	3	0	1	0	2	0	3
HUMBOLDT							
Probable	1	1	0	0	0	0	1
Unrelated	1						

Relationship ²	TOTAL CASES	Type Of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
IMPERIAL							
Definite	2	0	2	0	0	2	0
Probable	4	1	3	0	0	3	1
Possible	1	0	0	0	1	0	1
Unrelated	3						
INYO							
Definite	1	1	0	0	0	0	1
Unrelated	1						
KERN							
Definite	5	4	1	0	0	2	3
Probable	185	2	179	2	2	182	3
Possible	23	0	8	13	2	21	2
Asymptomatic	20	0	16	0	4	19	1
Unrelated	8						
Unavailable	3						
KINGS							
Possible	1	0	0	1	0	1	0
Unrelated	1						
LAKE							
Definite	1	1	0	0	0	0	1
Probable	1	0	1	0	0	0	1
Unavailable	1						
LASSEN							
Unrelated	1						
Unavailable	1						
LOS ANGELES							
Definite	31	27	2	0	2	1	30
Probable	44	12	23	3	6	0	44
Possible	19	2	4	6	7	1	18
Asymptomatic	4	1	1	0	2	0	4
Unrelated	29						
Insufficient	1						
Unavailable	18						

Relationship ²	TOTAL CASES	Type Of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
MADERA							
Definite	4	3	0	0	1	1	3
Probable	4	1	2	1	0	3	1
Possible	3	0	0	1	2	2	1
Unlikely	4	0	0	3	1	1	3
MARIN							
Definite	2	1	0	0	1	1	1
Probable	3	1	2	0	0	0	3
Unrelated	1						
MARIPOSA							
Unlikely	1	0	0	0	1	0	1
MENDOCINO							
Definite	2	2	0	0	0	0	2
Probable	3	1	0	1	1	0	3
Possible	2	0	0	1	1	2	0
Unrelated	1						
MERCED							
Definite	3	3	0	0	0	2	1
Probable	7	1	1	3	2	5	2
Possible	18	1	8	5	4	13	5
Asymptomatic	1	0	1	0	0	1	0
Unrelated	8						
Unavailable	2						
MONTEREY							
Definite	4	4	0	0	0	0	4
Probable	14	1	4	6	3	11	3
Possible	13	0	0	13	0	13	0
Unlikely	7	0	7	0	0	7	0
Asymptomatic	1	0	1	0	0	1	0
Unrelated	5						
Unavailable	1						

Relationship ²	TOTAL CASES	Type Of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
NAPA							
Probable	2	1	1	0	0	0	2
Possible	3	1	0	1	1	2	1
Unlikely	1	0	0	0	1	1	0
Unrelated	1						
NEVADA							
Probable	1	1	0	0	0	0	1
ORANGE							
Definite	6	6	0	0	0	2	4
Probable	25	2	5	15	3	14	11
Possible	1	0	1	0	0	0	1
Unrelated	8						
Unavailable	2						
PLACER							
Definite	1	1	0	0	0	0	1
Unrelated	1						
PLUMAS							
Unrelated	1						
RIVERSIDE							
Definite	9	7	1	0	1	2	7
Probable	30	2	19	0	9	19	11
Possible	4	0	0	2	2	2	2
Asymptomatic	2	0	1	0	1	1	1
Unrelated	10						
Unavailable	3						
SACRAMENTO							
Definite	3	3	0	0	0	0	3
Probable	9	2	2	3	2	0	9
Possible	5	1	0	1	3	2	3
Unlikely	3	0	2	1	0	1	2
Unrelated	7						
Unavailable	7						

Relationship ²	TOTAL CASES	Type Of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
SAN BENITO							
Definite	1	1	0	0	0	1	0
Possible	1	0	1	0	0	0	1
SAN BERNARDINO							
Definite	6	6	0	0	0	0	6
Probable	3	3	0	0	0	0	3
Possible	1	0	0	0	1	0	1
Unrelated	111						
Unavailable	4						
SAN DIEGO							
Definite	10	9	1	0	0	0	10
Probable	14	3	10	0	1	8	6
Possible	16	1	7	4	4	3	13
Unrelated	16						
Unavailable	6						
SAN FRANCISCO							
Probable	3	0	1	1	1	0	3
Possible	2	0	0	0	2	0	2
Unavailable	2						
SAN JOAQUIN							
Definite	5	5	0	0	0	3	2
Probable	23	6	15	2	0	16	7
Possible	18	2	11	2	3	13	5
Asymptomatic	2	0	0	0	2	0	2
Unrelated	9						
Unavailable	4						
SAN LUIS OBISPO							
Possible	1	0	0	1	0	1	0
Unavailable	2						
SAN MATEO							
Definite	3	1	0	0	2	0	3
Unavailable	1						

Relationship ²	TOTAL CASES	Type Of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
SANTA BARBARA							
Definite	1	1	0	0	0	0	1
Probable	2	1	0	0	1	1	1
Possible	1	0	0	0	1	1	0
Unrelated	2						
SANTA CLARA							
Definite	2	2	0	0	0	0	2
Probable	5	1	3	1	0	0	5
Possible	3	0	0	0	3	0	3
Unrelated	3						
Insufficient	1						
Unavailable	1						
SANTA CRUZ							
Probable	1	0	1	0	0	0	1
Unlikely	1						
Unrelated	1						
SHASTA							
Definite	1	1	0	0	0	0	1
Probable	1	1	0	0	0	0	1
Unrelated	1						
Unavailable	3						
SISKIYOU							
Definite	1	1	0	0	0	0	1
Probable	1	0	1	0	0	0	1
Unlikely	1	0	0	1	0	0	1
Unavailable	1						
SOLANO							
Definite	5	4	1	0	0	0	5
Probable	7	1	5	1	0	0	7
Possible	2	1	0	0	1	0	2
Asymptomatic	1	0	0	0	1	0	1
Unrelated	5						

Relationship ²	TOTAL CASES	Type Of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
SONOMA							
Definite	9	8	0	0	1	0	9
Probable	12	4	5	1	2	2	10
Possible	5	0	1	3	1	3	2
Asymptomatic	2	1	0	0	1	0	2
Unrelated	13						
Unavailable	1						
STANISLAUS							
Definite	7	7	0	0	0	2	5
Probable	9	2	3	3	1	0	9
Possible	5	0	0	2	3	4	1
Unrelated	8						
Unavailable	3						
SUTTER							
Definite	2	2	0	0	0	0	2
Possible	1	0	0	1	0	1	0
TEHAMA							
Definite	1	1	0	0	0	1	0
Possible	3	0	2	1	0	2	1
TRINITY							
Unrelated	1						
TULARE							
Definite	4	2	0	0	2	0	4
Probable	2	1	0	1	0	1	1
Possible	6	0	0	5	1	5	1
Unlikely	4	0	0	1	3	4	0
Unrelated	2						
TUOLUMNE							
Probable	1	0	1	0	0	0	1
VENTURA							
Definite	1	1	0	0	0	0	1
Probable	2	0	0	2	0	0	2
Unrelated	2						
Unavailable	2						

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

- 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.
- 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 judgment 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. **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.