

**Summary of Illness/Injury Incidents
Reported in California as Potentially Related to Pesticide Exposure
Summarized Statewide and by County of Occurrence¹
2014**

Relationship ²	TOTAL CASES	Type of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/ Unknown	Agricultural	Non-Agricultural
TOTALS							
Definite	117	66	27	5	19	24	92
Probable	603	167	263	53	120	179	422
Possible	353	33	85	61	174	62	284
Unlikely	42	3	7	7	25	16	26
Indirect	10	0	0	9	1	1	9
Asymptomatic	111	2	105	3	1	107	4
Unrelated	167	-	-	-	-	-	-
Insufficient	59	-	-	-	-	-	-
Unavailable	223	-	-	-	-	-	-
OVERALL	1685	271	487	138	340	389	837

County⁵							
Relationship ²	TOTAL CASES	Type of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/ Unknown	Agricultural	Non-Agricultural
ALAMEDA							
Definite	2	1	0	1	0	0	2
Probable	15	6	4	1	4	0	15
Possible	7	0	2	0	5	0	7
Unlikely	3	0	0	1	2	0	3
Unrelated	7	-	-	-	-	-	-
Unavailable	11	-	-	-	-	-	-
TOTAL	45	7	6	3	11	0	27
BUTTE							
Definite	2	1	0	0	1	0	2
Probable	5	3	1	0	1	0	5
Possible	5	1	2	0	2	0	4

County ⁵							
Relationship ²	TOTAL CASES	Type of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/ Unknown	Agricultural	Non-Agricultural
Insufficient	2	-	-	-	-	-	-
Unavailable	3	-	-	-	-	-	-
TOTAL	17	5	3	0	4	0	11
COLUSA							
Insufficient	1	-	-	-	-	-	-
Unavailable	2	-	-	-	-	-	-
TOTAL	3	0	0	0	0	0	0
CONTRA COSTA							
Definite	4	1	0	0	3	1	3
Probable	8	5	1	0	2	0	8
Possible	1	1	0	0	0	0	1
Unrelated	3	-	-	-	-	-	-
Unavailable	6	-	-	-	-	-	-
TOTAL	22	7	1	0	5	1	12
DEL NORTE							
Probable	1	1	0	0	0	0	1
Insufficient	1	-	-	-	-	-	-
TOTAL	2	1	0	0	0	0	1
EL DORADO							
Definite	1	0	1	0	0	0	1
Probable	1	1	0	0	0	0	1
Possible	1	1	0	0	0	0	0
Unrelated	1	-	-	-	-	-	-
TOTAL	4	2	1	0	0	0	2
FRESNO							
Definite	3	1	2	0	0	1	2
Probable	52	7	24	13	8	33	18
Possible	25	1	7	6	11	9	15
Unlikely	6	0	1	2	3	4	2
Asymptomatic	16	0	14	2	0	16	0

County ⁵							
Relationship ²	TOTAL CASES	Type of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
Unrelated	7	-	-	-	-	-	-
Insufficient	3	-	-	-	-	-	-
Unavailable	14	-	-	-	-	-	-
TOTAL	126	9	48	23	22	63	37
GLENN							
Definite	1	1	0	0	0	0	1
Probable	3	1	2	0	0	1	2
Possible	2	0	0	0	2	1	1
TOTAL	6	2	2	0	2	2	4
HUMBOLDT							
Possible	1	0	0	1	0	1	0
Insufficient	1	-	-	-	-	-	-
Unavailable	3	-	-	-	-	-	-
TOTAL	5	0	0	1	0	1	0
IMPERIAL							
Definite	1	1	0	0	0	0	1
Probable	3	2	0	1	0	0	3
Possible	6	0	6	0	0	5	1
Unlikely	3	1	1	0	1	2	1
Asymptomatic	1	0	1	0	0	1	0
Unrelated	2	-	-	-	-	-	-
Unavailable	1	-	-	-	-	-	-
TOTAL	17	4	8	1	1	8	6
INYO							
Possible	1	0	0	1	0	0	1
TOTAL	1	0	0	1	0	0	1
KERN							
Definite	3	2	0	0	1	0	3
Probable	15	4	7	0	4	0	15
Possible	10	1	3	2	4	3	6

County ⁵							
Relationship ²	TOTAL CASES	Type of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/ Unknown	Agricultural	Non-Agricultural
Unlikely	1	0	0	1	0	1	0
Asymptomatic	1	1	0	0	0	0	1
Unrelated	6	-	-	-	-	-	-
Insufficient	9	-	-	-	-	-	-
Unavailable	12	-	-	-	-	-	-
TOTAL	57	8	10	3	9	4	25
KINGS							
Definite	1	0	0	0	1	0	1
Probable	9	2	7	0	0	4	5
Possible	1	0	0	0	1	0	1
Unrelated	3	-	-	-	-	-	-
Unavailable	3	-	-	-	-	-	-
TOTAL	17	2	7	0	2	4	7
LAKE							
Possible	2	0	1	1	0	1	1
TOTAL	2	0	1	1	0	1	1
LASSEN							
Probable	2	1	1	0	0	0	2
Possible	1	0	0	0	1	0	1
Unavailable	1	-	-	-	-	-	-
TOTAL	4	1	1	0	1	0	3
LOS ANGELES							
Definite	15	10	4	0	1	0	15
Probable	92	31	25	8	28	0	92
Possible	67	4	12	19	32	0	67
Unlikely	3	0	1	0	2	0	3
Indirect	9	0	0	9	0	0	9
Asymptomatic	3	1	0	1	1	0	3
Unrelated	29	-	-	-	-	-	-
Insufficient	12	-	-	-	-	-	-

County ⁵							
Relationship ²	TOTAL CASES	Type of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/ Unknown	Agricultural	Non-Agricultural
Unavailable	52	-	-	-	-	-	-
TOTAL	282	46	42	37	64	0	189
MADERA							
Definite	1	1	0	0	0	1	0
Probable	4	2	2	0	0	2	2
Possible	4	1	0	0	3	1	3
Unlikely	2	0	0	0	2	1	1
TOTAL	11	4	2	0	5	5	6
MARIN							
Probable	1	1	0	0	0	0	1
Unrelated	1	-	-	-	-	-	-
TOTAL	2	1	0	0	0	0	1
MENDOCINO							
Probable	2	1	1	0	0	0	2
Possible	3	1	0	0	2	1	1
Unlikely	1	0	0	1	0	1	0
TOTAL	6	2	1	1	2	2	3
MERCED							
Definite	2	2	0	0	0	1	1
Probable	6	3	1	0	2	1	5
Possible	7	0	0	2	5	3	4
Unlikely	1	0	0	0	1	0	1
Unrelated	6	-	-	-	-	-	-
Insufficient	4	-	-	-	-	-	-
Unavailable	5	-	-	-	-	-	-
TOTAL	31	5	1	2	8	5	11
MODOC							
Possible	1	0	0	0	1	0	1
TOTAL	1	0	0	0	1	0	1
MONTEREY							

County ⁵							
Relationship ²	TOTAL CASES	Type of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
Definite	6	4	2	0	0	4	2
Probable	21	2	14	3	2	12	9
Possible	12	3	5	1	3	8	4
Unlikely	4	1	1	0	2	3	1
Asymptomatic	11	0	11	0	0	11	0
Unrelated	7	-	-	-	-	-	-
Unavailable	3	-	-	-	-	-	-
TOTAL	64	10	33	4	7	38	16
NAPA							
Probable	9	3	2	1	3	0	9
Possible	1	0	0	0	1	0	1
TOTAL	10	3	2	1	4	0	10
NEVADA							
Probable	1	1	0	0	0	0	1
Possible	2	0	0	0	2	0	2
Unlikely	1	0	1	0	0	0	1
Insufficient	1	-	-	-	-	-	-
TOTAL	5	1	1	0	2	0	4
ORANGE							
Definite	5	3	1	0	1	0	5
Probable	28	12	8	2	6	0	28
Possible	17	4	4	5	4	0	17
Unrelated	6	-	-	-	-	-	-
Insufficient	1	-	-	-	-	-	-
Unavailable	19	-	-	-	-	-	-
TOTAL	76	19	13	7	11	0	50
PLACER							
Probable	2	0	1	0	1	0	2
Possible	3	1	1	0	1	0	3
Unrelated	2	-	-	-	-	-	-

County ⁵							
Relationship ²	TOTAL CASES	Type of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/ Unknown	Agricultural	Non-Agricultural
Unavailable	1	-	-	-	-	-	-
TOTAL	8	1	2	0	2	0	5
PLUMAS							
Possible	1	0	0	0	1	0	1
Insufficient	1	-	-	-	-	-	-
Unavailable	1	-	-	-	-	-	-
TOTAL	3	0	0	0	1	0	1
RIVERSIDE							
Definite	9	4	4	1	0	0	9
Probable	25	12	8	0	5	1	24
Possible	15	3	3	0	9	0	15
Unrelated	12	-	-	-	-	-	-
Insufficient	2	-	-	-	-	-	-
Unavailable	9	-	-	-	-	-	-
TOTAL	72	19	15	1	14	1	48
SACRAMENTO							
Definite	4	4	0	0	0	0	4
Probable	24	5	15	1	3	14	10
Possible	14	0	8	1	5	7	7
Unlikely	1	0	1	0	0	1	0
Asymptomatic	1	0	1	0	0	1	0
Unrelated	2	-	-	-	-	-	-
Unavailable	10	-	-	-	-	-	-
TOTAL	56	9	25	2	8	23	21
SAN BENITO							
Probable	1	0	0	1	0	0	1
Possible	2	0	0	0	2	1	1
Unrelated	1	-	-	-	-	-	-
TOTAL	4	0	0	1	2	1	2
SAN BERNARDINO							

County ⁵							
Relationship ²	TOTAL CASES	Type of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/ Unknown	Agricultural	Non-Agricultural
Definite	6	5	0	0	1	0	5
Probable	23	7	8	1	7	0	23
Possible	19	1	0	1	17	0	19
Unlikely	3	0	0	0	3	0	3
Unrelated	11	-	-	-	-	-	-
Unavailable	8	-	-	-	-	-	-
TOTAL	70	13	8	2	28	0	50
SAN DIEGO							
Definite	8	5	1	0	2	1	7
Probable	30	11	6	3	10	1	29
Possible	25	2	4	3	16	2	23
Unlikely	2	0	1	1	0	0	2
Unrelated	21	-	-	-	-	-	-
Insufficient	1	-	-	-	-	-	-
Unavailable	8	-	-	-	-	-	-
TOTAL	95	18	12	7	28	4	61
SAN FRANCISCO							
Probable	6	2	1	0	3	0	6
Possible	9	0	2	2	5	0	9
Unrelated	2	-	-	-	-	-	-
Insufficient	2	-	-	-	-	-	-
Unavailable	2	-	-	-	-	-	-
TOTAL	21	2	3	2	8	0	15
SAN JOAQUIN							
Definite	5	3	0	0	2	2	3
Probable	15	6	4	1	4	3	12
Possible	10	1	1	0	8	1	9
Unlikely	3	0	0	1	2	1	2
Unrelated	3	-	-	-	-	-	-
Insufficient	1	-	-	-	-	-	-

County ⁵							
Relationship ²	TOTAL CASES	Type of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
Unavailable	8	-	-	-	-	-	-
TOTAL	45	10	5	2	16	7	26
SAN LUIS OBISPO							
Definite	2	0	2	0	0	2	0
Probable	15	0	13	0	2	11	4
Possible	4	1	1	1	1	1	3
Asymptomatic	12	0	12	0	0	12	0
Unrelated	1	-	-	-	-	-	-
Unavailable	1	-	-	-	-	-	-
TOTAL	35	1	28	1	3	26	7
SAN MATEO							
Definite	2	1	0	0	1	0	2
Probable	8	3	1	1	3	0	8
Possible	4	1	2	0	1	1	3
Unrelated	1	-	-	-	-	-	-
Unavailable	1	-	-	-	-	-	-
TOTAL	16	5	3	1	5	1	13
SANTA BARBARA							
Definite	3	2	0	0	1	1	2
Probable	7	1	1	4	1	3	4
Possible	2	1	1	0	0	1	1
Unrelated	2	-	-	-	-	-	-
Unavailable	1	-	-	-	-	-	-
TOTAL	15	4	2	4	2	5	7
SANTA CLARA							
Definite	10	7	0	2	1	0	10
Probable	14	7	5	2	0	1	13
Possible	6	2	1	0	3	0	6
Unlikely	2	1	0	0	1	0	2
Unrelated	8	-	-	-	-	-	-

County ⁵							
Relationship ²	TOTAL CASES	Type of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
Insufficient	3	-	-	-	-	-	-
Unavailable	10	-	-	-	-	-	-
TOTAL	53	17	6	4	5	1	31
SANTA CRUZ							
Definite	2	2	0	0	0	0	2
Probable	40	0	38	0	2	37	3
Possible	9	0	3	3	3	5	4
Unlikely	2	0	0	0	2	0	2
Asymptomatic	25	0	25	0	0	25	0
Unrelated	1	-	-	-	-	-	-
Insufficient	1	-	-	-	-	-	-
Unavailable	3	-	-	-	-	-	-
TOTAL	83	2	66	3	7	67	11
SHASTA							
Definite	1	0	0	0	1	0	1
Probable	10	1	1	5	3	0	10
Possible	1	0	1	0	0	0	1
Unlikely	1	0	0	0	1	0	1
Insufficient	1	-	-	-	-	-	-
Unavailable	1	-	-	-	-	-	-
TOTAL	15	1	2	5	5	0	13
SIERRA							
Unavailable	1	-	-	-	-	-	-
TOTAL	1	-	-	-	-	-	-
SISKIYOU							
Probable	1	0	1	0	0	1	0
Possible	2	0	2	0	0	1	1
Unlikely	1	0	0	0	1	1	0
Insufficient	1	-	-	-	-	-	-
TOTAL	5	0	3	0	1	3	1

County ⁵							
Relationship ²	TOTAL CASES	Type of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/ Unknown	Agricultural	Non-Agricultural
SOLANO							
Definite	2	1	1	0	0	1	1
Probable	1	1	0	0	0	0	1
Possible	2	0	1	0	1	0	2
Unrelated	4	-	-	-	-	-	-
Unavailable	1	-	-	-	-	-	-
TOTAL	10	2	2	0	1	1	4
SONOMA							
Definite	1	0	1	0	0	0	1
Probable	4	2	0	2	0	0	4
Possible	3	0	0	1	2	0	3
Unlikely	1	0	0	0	1	0	1
Unrelated	2	-	-	-	-	-	-
Insufficient	7	-	-	-	-	-	-
Unavailable	1	-	-	-	-	-	-
TOTAL	19	2	1	3	3	0	9
STANISLAUS							
Definite	1	0	1	0	0	0	1
Probable	8	0	4	0	4	1	6
Possible	8	1	0	0	7	1	6
Unrelated	7	-	-	-	-	-	-
Insufficient	1	-	-	-	-	-	-
Unavailable	6	-	-	-	-	-	-
TOTAL	31	1	5	0	11	2	13
SUTTER							
Definite	7	0	7	0	0	7	0
Probable	7	5	2	0	0	6	1
Possible	5	0	5	0	0	5	0
Asymptomatic	3	0	3	0	0	3	0
Unavailable	1	-	-	-	-	-	-

County ⁵							
Relationship ²	TOTAL CASES	Type of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/ Unknown	Agricultural	Non-Agricultural
TOTAL	23	5	17	0	0	21	1
TEHAMA							
Probable	2	1	0	1	0	0	2
Possible	1	0	1	0	0	0	1
Unrelated	1	-	-	-	-	-	-
Insufficient	1	-	-	-	-	-	-
TOTAL	5	1	1	1	0	0	3
TRINITY							
Probable	1	0	1	0	0	0	1
TOTAL	1	0	1	0	0	0	1
TULARE							
Probable	52	6	41	1	4	39	13
Possible	12	0	1	3	8	1	11
Unlikely	1	0	0	0	1	1	0
Asymptomatic	37	0	37	0	0	37	0
Unrelated	5	-	-	-	-	-	-
Unavailable	5	-	-	-	-	-	-
TOTAL	112	6	79	4	13	78	24
TUOLUMNE							
Definite	1	0	0	0	1	0	1
Probable	1	1	0	0	0	0	1
Unrelated	1	-	-	-	-	-	-
TOTAL	3	1	0	0	1	0	2
VENTURA							
Definite	5	4	0	0	1	2	3
Probable	10	4	0	1	5	0	10
Possible	5	0	4	0	1	0	5
Unrelated	1	-	-	-	-	-	-
Unavailable	2	-	-	-	-	-	-
TOTAL	23	8	4	1	7	2	18

County ⁵							
Relationship ²	TOTAL CASES	Type of Exposure ³				Intended Use ⁴	
		Direct Contact	Drift	Residue	Other/ Unknown	Agricultural	Non-Agricultural
YOLO							
Definite	1	0	0	1	0	0	1
Probable	15	0	12	0	3	8	7
Possible	6	0	1	1	4	2	3
Indirect	1	0	0	0	1	1	0
Asymptomatic	1	0	1	0	0	1	0
Unrelated	1	-	-	-	-	-	-
Insufficient	2	-	-	-	-	-	-
Unavailable	7	-	-	-	-	-	-
TOTAL	34	0	14	2	8	12	11
YUBA							
Probable	3	3	0	0	0	0	3
Possible	8	1	0	7	0	0	8
TOTAL	11	4	0	7	0	0	11

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 (e.g., measured cholinesterase inhibition, positive allergy tests, characteristic signs observed by medical professional) and physical evidence of exposure (e.g., 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.

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.”

3. Type of Exposure: Characterization of how an individual came in contact with a pesticide. Type of exposure is not inputted in cases classified as Unrelated, Insufficient, or Unavailable.

- 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. Intended use is not inputted in cases classified as Unrelated, Insufficient, or Unavailable.

- 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
Physical address: 1001 I St., Sacramento, CA 95814-2828
Mailing address: P.O. Box 4015, Sacramento, CA 95812-4015
Phone: (916) 445-4222
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 the effectiveness of the DPR pesticide safety programs and recommend changes when appropriate.