

**Table C1: Summary of Illness/Injury Incidents
Reported in California¹ Related to Pesticide Exposure,
Summarized Statewide and by County of Occurrence
2023**

Statewide

Relationship ²	TOTAL EPISODES ³	TOTAL CASES	Type of Exposure ⁴				Intended Use ⁵	
			Direct Contact	Off- Site	Residue	Other/ Unknown	Agricultural	Non- Agricultural
TOTALS								
Definite		82	54	12	3	13	5	73
Probable		785	259	284	164	78	285	497
Possible		160	34	34	47	45	36	121
TOTAL	708	1,027	347	330	214	136	326	691

County of Occurrence⁶

Relationship ²	TOTAL EPISODES ³	TOTAL CASES	Type of Exposure ⁴				Intended Use ⁵	
			Direct Contact	Off- Site	Residue	Other/ Unknown	Agricultural	Non- Agricultural
ALAMEDA								
Definite		3	2	1	0	0	0	3
Probable		12	7	4	0	1	0	12
Possible		3	0	0	0	3	0	3
TOTAL	18	18	9	5	0	4	0	18
AMADOR								
Definite		1	1	0	0	0	0	1
Possible		1	1	0	0	0	0	1
TOTAL	2	2	2	0	0	0	0	2
BUTTE								
Definite		1	0	0	0	1	0	1
Probable		4	1	3	0	0	0	3
Possible		2	0	0	0	2	0	2
TOTAL	6	7	1	3	0	3	0	6
CONTRA COSTA								
Definite		3	2	0	0	1	0	3
Probable		10	2	5	2	1	0	10
Possible		1	0	0	0	1	0	1
TOTAL	14	14	4	5	2	3	0	14

Relationship ²	TOTAL EPISODES ³	TOTAL CASES	Type of Exposure ⁴				Intended Use ⁵	
			Direct Contact	Off- Site	Residue	Other/ Unknown	Agricultural	Non- Agricultural
DEL NORTE								
Definite		1	0	1	0	0	1	0
Probable		1	1	0	0	0	0	1
Possible		1	0	0	0	1	0	1
TOTAL	3	3	1	1	0	1	1	2
EL DORADO								
Probable		2	2	0	0	0	0	2
TOTAL	2	2	2	0	0	0	0	2
FRESNO								
Definite		3	1	0	1	1	0	2
Probable		52	3	28	18	3	42	10
Possible		9	0	7	1	1	5	2
TOTAL	21	64	4	35	20	5	47	14
HUMBOLDT								
Probable		1	1	0	0	0	0	1
Possible		1	1	0	0	0	0	1
TOTAL	2	2	2	0	0	0	0	2
IMPERIAL								
Definite		2	2	0	0	0	0	2
Probable		8	1	7	0	0	6	2
TOTAL	6	10	3	7	0	0	6	4
INYO								
Probable		1	0	0	1	0	0	1
TOTAL	1	1	0	0	1	0	0	1
KERN								
Definite		4	3	1	0	0	0	4
Probable		37	20	13	3	1	13	24
Possible		9	2	5	2	0	4	5
TOTAL	46	50	25	19	5	1	17	33
KINGS								
Probable		24	3	20	1	0	21	3
Possible		5	1	1	1	2	1	4
TOTAL	10	29	4	21	2	2	22	7

Relationship ²	TOTAL EPISODES ³	TOTAL CASES	Type of Exposure ⁴				Intended Use ⁵	
			Direct Contact	Off-Site	Residue	Other/Unknown	Agricultural	Non-Agricultural
LAKE								
Probable		2	1	1	0	0	0	2
TOTAL	2	2	1	1	0	0	0	2
LASSEN								
Possible		1	1	0	0	0	0	1
TOTAL	1	1	1	0	0	0	0	1
LOS ANGELES								
Definite		11	8	1	1	1	0	11
Probable		112	50	31	11	20	0	112
Possible		23	11	0	6	6	0	23
TOTAL	127	146	69	32	18	27	0	146
MADERA								
Definite		1	0	0	0	1	0	1
Probable		6	4	1	0	1	2	4
Possible		1	1	0	0	0	0	1
TOTAL	7	8	5	1	0	2	2	6
MARIPOSA								
Probable		1	1	0	0	0	0	1
TOTAL	1	1	1	0	0	0	0	1
MENDOCINO								
Probable		2	0	0	1	1	0	2
Possible		1	0	0	0	1	0	1
TOTAL	3	3	0	0	1	2	0	3
MERCED								
Probable		17	11	3	0	3	3	14
Possible		8	0	1	0	7	0	8
TOTAL	17	25	11	4	0	10	3	22
MONTEREY								
Definite		1	1	0	0	0	1	0
Probable		107	2	36	68	1	100	7
Possible		8	0	5	3	0	7	1
TOTAL	13	116	3	41	71	1	108	8
NAPA								

Relationship ²	TOTAL EPISODES ³	TOTAL CASES	Type of Exposure ⁴				Intended Use ⁵	
			Direct Contact	Off- Site	Residue	Other/ Unknown	Agricultural	Non- Agricultural
Probable		1	0	1	0	0	0	1
TOTAL	1	1	0	1	0	0	0	1
NEVADA								
Probable		1	1	0	0	0	0	1
TOTAL	1	1	1	0	0	0	0	1
ORANGE								
Definite		4	3	0	0	1	0	2
Probable		31	16	10	1	4	0	31
Possible		8	1	3	4	0	0	8
TOTAL	42	43	20	13	5	5	0	41
PLACER								
Definite		3	1	0	1	1	0	3
Probable		2	1	1	0	0	0	2
TOTAL	5	5	2	1	1	1	0	5
PLUMAS								
Probable		1	1	0	0	0	0	1
TOTAL	1	1	1	0	0	0	0	1
RIVERSIDE								
Definite		5	4	1	0	0	1	3
Probable		38	19	11	0	8	2	36
Possible		9	5	1	0	3	0	9
TOTAL	49	52	28	13	0	11	3	48
SACRAMENTO								
Definite		1	1	0	0	0	0	1
Probable		14	2	6	3	3	2	12
Possible		5	1	1	0	3	1	4
TOTAL	19	20	4	7	3	6	3	17
SAN BENITO								
Possible		1	0	0	0	1	0	1
TOTAL	1	1	0	0	0	1	0	1
SAN BERNARDINO								
Definite		9	7	0	0	2	0	9

Relationship ²	TOTAL EPISODES ³	TOTAL CASES	Type of Exposure ⁴				Intended Use ⁵	
			Direct Contact	Off-Site	Residue	Other/Unknown	Agricultural	Non-Agricultural
Probable		28	8	9	3	8	0	28
Possible		9	1	0	3	5	0	9
TOTAL	41	46	16	9	6	15	0	46
SAN DIEGO								
Definite		7	5	1	0	1	0	7
Probable		37	24	9	0	4	0	37
Possible		8	0	2	5	1	0	8
TOTAL	40	52	29	12	5	6	0	52
SAN FRANCISCO								
Probable		5	2	3	0	0	0	5
Possible		1	1	0	0	0	0	1
TOTAL	6	6	3	3	0	0	0	6
SAN JOAQUIN								
Definite		4	2	1	0	1	0	4
Probable		21	5	12	1	3	12	8
Possible		2	1	1	0	0	2	0
TOTAL	17	27	8	14	1	4	14	12
SAN LUIS OBISPO								
Definite		1	1	0	0	0	0	1
Probable		2	1	1	0	0	0	2
Possible		1	1	0	0	0	1	0
TOTAL	4	4	3	1	0	0	1	3
SAN MATEO								
Probable		1	0	0	0	1	0	1
TOTAL	1	1	0	0	0	1	0	1
SANTA BARBARA								
Definite		2	0	1	0	1	0	2
Probable		54	2	11	39	2	41	12
Possible		3	0	0	2	1	1	1
TOTAL	20	59	2	12	41	4	42	15
SANTA CLARA								
Definite		1	0	1	0	0	0	1
Probable		20	12	1	3	4	0	20

Relationship ²	TOTAL EPISODES ³	TOTAL CASES	Type of Exposure ⁴				Intended Use ⁵	
			Direct Contact	Off- Site	Residue	Other/ Unknown	Agricultural	Non- Agricultural
Possible		6	0	0	6	0	0	6
TOTAL	26	27	12	2	9	4	0	27
SANTA CRUZ								
Probable		6	4	2	0	0	2	4
Possible		1	0	0	1	0	0	1
TOTAL	6	7	4	2	1	0	2	5
SHASTA								
Definite		2	2	0	0	0	0	2
Probable		3	1	1	1	0	0	3
TOTAL	5	5	3	1	1	0	0	5
SISKIYOU								
Probable		2	1	1	0	0	0	2
TOTAL	2	2	1	1	0	0	0	2
SOLANO								
Definite		1	0	1	0	0	0	1
Probable		6	3	2	1	0	0	6
Possible		4	1	0	2	1	0	4
TOTAL	11	11	4	3	3	1	0	11
SONOMA								
Definite		1	1	0	0	0	0	1
Probable		7	3	1	3	0	0	7
Possible		1	0	0	1	0	0	1
TOTAL	8	9	4	1	4	0	0	9
STANISLAUS								
Definite		2	1	0	0	1	1	1
Probable		38	10	24	2	2	20	18
Possible		9	2	3	0	4	5	4
TOTAL	26	49	13	27	2	7	26	23
SUTTER								
Probable		2	2	0	0	0	1	1
Possible		5	0	0	4	1	0	5
TOTAL	3	7	2	0	4	1	1	6
TEHAMA								

Relationship ²	TOTAL EPISODES ³	TOTAL CASES	Type of Exposure ⁴				Intended Use ⁵	
			Direct Contact	Off-Site	Residue	Other/Unknown	Agricultural	Non-Agricultural
Probable		4	3	0	0	1	0	4
Possible		1	0	1	0	0	1	0
TOTAL	5	5	3	1	0	1	1	4
TULARE								
Definite		3	2	1	0	0	1	2
Probable		34	7	22	2	3	16	18
Possible		4	0	1	3	0	3	1
TOTAL	27	41	9	24	5	3	20	21
TUOLUMNE								
Definite		1	1	0	0	0	0	1
Probable		4	3	1	0	0	0	4
TOTAL	5	5	4	1	0	0	0	5
VENTURA								
Definite		2	2	0	0	0	0	2
Probable		11	7	2	0	2	2	9
Possible		5	0	1	3	1	4	1
TOTAL	16	18	9	3	3	3	6	12
YOLO								
Definite		1	0	1	0	0	0	1
Probable		10	9	1	0	0	0	10
Possible		2	1	1	0	0	1	1
TOTAL	13	13	10	3	0	0	1	12
YUBA								
Definite		1	1	0	0	0	0	1
Probable		3	2	0	0	1	0	3
Possible		1	1	0	0	0	0	1
TOTAL	5	5	4	0	0	1	0	5

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 Definite or Probable relationship.

3. Episode: An event in which a particular source appears to have exposed one or more people (cases) to pesticides.

4. 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.

Off-Site Movement: Spray, mist, vapors, or odor carried by air. Off-site movement 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.

5. Intended Use: 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, 4) transportation and storage of pesticides on farm lands, 5) mosquito abatement in rice field, 6) fly suppression in livestock production, excluding non-agricultural areas (e.g., office), 7) applications to uncultivated agricultural land, and 8) suppression of vermin by growers. 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, 6) manufacture, transportation and storage of pesticides except on farm lands, and 7) forestry operations for conservancy.

6. County: Individual counties in California where the incident occurred. If a county is not listed, there were no reported illnesses or associated episodes/cases 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) 322-8577

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.