

**Table C1: Summary of Illness/Injury Incidents
Reported in California¹ Related to Pesticide Exposure,
Summarized Statewide and by County of Occurrence
2022**

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		120	86	21	3	10	4	114
Probable		777	227	412	60	78	283	487
Possible		144	19	33	60	32	24	120
TOTAL	709	1041	332	466	123	120	311	721

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		1	1	0	0	0	0	1
Probable		17	5	6	6	0	0	17
Possible		3	0	0	2	1	0	3
TOTAL	18	21	6	6	8	1	0	21
AMADOR								
Definite		1	0	0	0	1	0	1
TOTAL	1	1	0	0	0	1	0	1
BUTTE								
Definite		1	1	0	0	0	0	1
Probable		2	0	1	0	1	1	1
Possible		1	0	1	0	0	0	1
TOTAL	4	4	1	2	0	1	1	3
CALAVERAS								
Probable		3	2	1	0	0	0	3
TOTAL	3	3	2	1	0	0	0	3
COLUSA								
Possible		1	0	0	1	0	0	1
TOTAL	1	1	0	0	1	0	0	1

Relationship ²	TOTAL EPISODES ³	TOTAL CASES	Type of Exposure ⁴				Intended Use ⁵	
			Direct Contact	Off- Site	Residue	Other/ Unknown	Agricultural	Non- Agricultural
CONTRA COSTA								
Definite		2	1	1	0	0	0	2
Probable		16	5	5	5	1	5	11
Possible		3	0	1	2	0	2	1
TOTAL	14	21	6	7	7	1	7	14
EL DORADO								
Probable		3	1	2	0	0	0	3
TOTAL	3	3	1	2	0	0	0	3
FRESNO								
Probable		29	9	16	2	2	19	10
Possible		4	0	2	0	2	2	2
TOTAL	24	33	9	18	2	4	21	12
HUMBOLDT								
Probable		1	0	1	0	0	0	1
TOTAL	1	1	0	1	0	0	0	1
IMPERIAL								
Definite		2	2	0	0	0	0	0
Probable		11	3	7	1	0	5	6
Possible		2	1	1	0	0	1	1
TOTAL	11	15	6	8	1	0	6	7
INYO								
Probable		1	1	0	0	0	0	1
TOTAL	1	1	1	0	0	0	0	1
KERN								
Definite		8	4	3	1	0	0	8
Probable		36	14	12	3	7	10	26
Possible		6	1	3	1	1	4	2
TOTAL	42	50	19	18	5	8	14	36
KINGS								
Definite		4	4	0	0	0	0	4
Probable		15	0	15	0	0	13	2
Possible		1	0	1	0	0	1	0
TOTAL	7	20	4	16	0	0	14	6

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	2	0	0	0	0	1
TOTAL	2	2	2	0	0	0	0	1
LASSEN								
Probable		2	0	2	0	0	0	2
TOTAL	2	2	0	2	0	0	0	2
LOS ANGELES								
Definite		11	7	3	0	1	0	11
Probable		99	37	41	12	9	6	92
Possible		33	5	2	19	7	0	33
TOTAL	123	143	49	46	31	17	6	136
MADERA								
Probable		11	1	4	4	2	3	8
Possible		2	1	1	0	0	1	1
TOTAL	10	13	2	5	4	2	4	9
MARIN								
Definite		1	0	1	0	0	0	1
Probable		9	0	8	1	0	0	9
TOTAL	3	10	0	9	1	0	0	10
MENDOCINO								
Definite		1	1	0	0	0	0	1
Probable		3	3	0	0	0	0	3
TOTAL	4	4	4	0	0	0	0	4
MERCED								
Definite		1	1	0	0	0	0	1
Probable		9	0	5	1	3	4	5
Possible		3	0	1	1	1	0	3
TOTAL	12	13	1	6	2	4	4	9
MONTEREY								
Definite		5	4	1	0	0	2	3
Probable		7	1	3	1	2	0	6
Possible		2	2	0	0	0	0	2
TOTAL	14	14	7	4	1	2	2	11

Relationship ²	TOTAL EPISODES ³	TOTAL CASES	Type of Exposure ⁴				Intended Use ⁵	
			Direct Contact	Off- Site	Residue	Other/ Unknown	Agricultural	Non- Agricultural
NAPA								
Definite		1	0	0	0	1	0	1
Probable		3	3	0	0	0	0	3
TOTAL	4	4	3	0	0	1	0	4
NEVADA								
Probable		1	1	0	0	0	0	1
Possible		1	0	1	0	0	0	1
TOTAL	2	2	1	1	0	0	0	2
ORANGE								
Definite		9	8	1	0	0	0	9
Probable		33	15	8	3	7	0	33
Possible		10	1	1	5	3	0	10
TOTAL	47	52	24	10	8	10	0	52
PLACER								
Definite		1	1	0	0	0	0	1
Probable		2	1	0	0	1	0	2
TOTAL	3	3	2	0	0	1	0	3
PLUMAS								
Probable		1	1	0	0	0	0	1
TOTAL	1	1	1	0	0	0	0	1
RIVERSIDE								
Definite		9	6	3	0	0	0	9
Probable		36	18	5	5	8	1	34
Possible		25	2	9	11	3	8	17
TOTAL	49	70	26	17	16	11	9	60
SACRAMENTO								
Definite		4	4	0	0	0	0	4
Probable		6	3	2	0	1	1	5
Possible		3	0	1	2	0	0	3
TOTAL	13	13	7	3	2	1	1	12
SAN BENITO								
Definite		1	1	0	0	0	0	1

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		2	1	0	0	1	1	1
Possible		1	0	0	1	0	0	1
TOTAL	4	4	2	0	1	1	1	3
SAN BERNARDINO								
Definite		5	3	2	0	0	0	5
Probable		27	18	5	2	2	0	27
Possible		10	0	1	5	4	0	10
TOTAL	38	42	21	8	7	6	0	42
SAN DIEGO								
Definite		12	7	3	1	1	0	12
Probable		38	20	10	1	7	0	38
Possible		7	2	2	1	2	0	7
TOTAL	52	57	29	15	3	10	0	57
SAN FRANCISCO								
Definite		3	3	0	0	0	0	3
Probable		4	2	0	1	1	0	4
Possible		1	0	0	0	1	0	1
TOTAL	8	8	5	0	1	2	0	8
SAN JOAQUIN								
Definite		2	2	0	0	0	0	2
Probable		16	7	6	1	2	1	14
Possible		3	0	0	1	2	0	3
TOTAL	21	21	9	6	2	4	1	19
SAN LUIS OBISPO								
Definite		1	1	0	0	0	0	1
Probable		3	0	3	0	0	1	2
Possible		2	0	1	0	1	1	1
TOTAL	6	6	1	4	0	1	2	4
SAN MATEO								
Definite		1	1	0	0	0	0	1
Probable		6	1	2	1	2	0	6
TOTAL	7	7	2	2	1	2	0	7
SANTA BARBARA								

Relationship ²	TOTAL EPISODES ³	TOTAL CASES	Type of Exposure ⁴				Intended Use ⁵	
			Direct Contact	Off-Site	Residue	Other/Unknown	Agricultural	Non-Agricultural
Definite		4	3	1	0	0	1	3
Probable		204	7	196	1	0	196	8
Possible		5	0	1	4	0	2	3
TOTAL	18	213	10	198	5	0	199	14
SANTA CLARA								
Definite		6	2	1	1	2	0	6
Probable		19	8	5	2	4	0	19
Possible		4	1	0	2	1	0	4
TOTAL	26	29	11	6	5	7	0	29
SANTA CRUZ								
Definite		1	1	0	0	0	0	1
Probable		2	0	1	1	0	0	2
TOTAL	3	3	1	1	1	0	0	3
SHASTA								
Definite		1	0	0	0	1	0	1
Probable		4	1	3	0	0	1	3
TOTAL	5	5	1	3	0	1	1	4
SOLANO								
Probable		4	3	1	0	0	0	4
TOTAL	4	4	3	1	0	0	0	4
SONOMA								
Definite		2	0	0	0	2	0	2
Probable		5	2	0	1	2	0	4
Possible		1	0	0	1	0	0	1
TOTAL	8	8	2	0	2	4	0	7
STANISLAUS								
Definite		5	5	0	0	0	0	5
Probable		23	6	12	2	3	1	22
Possible		4	2	2	0	0	0	4
TOTAL	25	32	13	14	2	3	1	31
SUTTER								
Probable		1	1	0	0	0	1	0
TOTAL	1	1	1	0	0	0	1	0

Relationship ²	TOTAL EPISODES ³	TOTAL CASES	Type of Exposure ⁴				Intended Use ⁵	
			Direct Contact	Off- Site	Residue	Other/ Unknown	Agricultural	Non- Agricultural
TEHAMA								
Definite		1	1	0	0	0	0	1
TOTAL	1	1	1	0	0	0	0	1
TRINITY								
Probable		1	1	0	0	0	0	0
TOTAL	1	1	1	0	0	0	0	0
TULARE								
Definite		2	2	0	0	0	0	2
Probable		33	10	19	0	4	10	23
Possible		6	1	1	1	3	2	4
TOTAL	26	41	13	20	1	7	12	29
TUOLUMNE								
Definite		2	2	0	0	0	0	2
Probable		2	2	0	0	0	0	2
TOTAL	3	4	4	0	0	0	0	4
VENTURA								
Definite		7	5	1	0	1	0	7
Probable		13	4	2	2	5	1	12
TOTAL	19	20	9	3	2	6	1	19
YOLO								
Definite		1	1	0	0	0	0	1
Probable		6	3	1	1	1	1	5
TOTAL	7	7	4	1	1	1	1	6
YUBA								
Definite		1	1	0	0	0	1	0
Probable		6	4	2	0	0	1	5
TOTAL	7	7	5	2	0	0	2	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 incident in which a one or more people (*cases*) experience pesticide exposure from a particular source.

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 from the target site 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: 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, 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.