

**Table C1: Summary of Illness/Injury Incidents
Reported in California¹ Related to Pesticide Exposure,
Summarized Statewide and by County of Occurrence
2021**

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		99	72	17	2	8	9	89
Probable		631	200	311	41	79	178	450
Possible		129	22	28	34	45	23	106
TOTAL	614	859	294	356	77	132	210	645

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		9	4	4	1	0	0	9
Possible		3	1	0	0	2	0	3
TOTAL	12	13	6	4	1	2	0	13
AMADOR								
Definite		1	0	1	0	0	0	1
TOTAL	1	1	0	1	0	0	0	1
BUTTE								
Probable		29	2	25	2	0	5	23
Possible		3	0	2	0	1	1	2
TOTAL	10	32	2	27	2	1	6	25
COLUSA								
Probable		11	2	0	7	2	3	8
TOTAL	4	11	2	0	7	2	3	8
CONTRA COSTA								
Definite		1	1	0	0	0	0	1
Probable		3	1	1	0	1	0	3
TOTAL	4	4	2	1	0	1	0	4

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								
Possible		1	0	0	1	0	0	1
TOTAL	1	1	0	0	1	0	0	1
EL DORADO								
Probable		1	1	0	0	0	0	1
TOTAL	1	1	1	0	0	0	0	1
FRESNO								
Definite		1	1	0	0	0	0	1
Probable		39	7	25	2	5	25	13
Possible		4	0	1	0	3	2	2
TOTAL	24	44	8	26	2	8	27	16
GLENN								
Definite		2	2	0	0	0	2	0
Probable		4	2	1	0	1	3	1
TOTAL	4	6	4	1	0	1	5	1
HUMBOLDT								
Probable		1	0	0	0	1	0	1
TOTAL	1	1	0	0	0	1	0	1
IMPERIAL								
Definite		5	3	1	0	1	0	5
Probable		11	2	8	0	1	8	3
TOTAL	8	16	5	9	0	2	8	8
INYO								
Probable		1	0	1	0	0	0	1
Possible		1	0	0	0	1	0	1
TOTAL	2	2	0	1	0	1	0	2
KERN								
Definite		8	7	1	0	0	0	8
Probable		39	10	21	5	3	18	21
Possible		3	0	1	0	2	0	3
TOTAL	38	50	17	23	5	5	18	32
KINGS								
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		1	0	0	1	0	0	1
Possible		2	0	1	1	0	1	1
TOTAL	3	4	1	1	2	0	1	3
LAKE								
Probable		2	1	1	0	0	0	2
Possible		1	1	0	0	0	0	1
TOTAL	3	3	2	1	0	0	0	3
LOS ANGELES								
Definite		14	8	5	0	1	0	13
Probable		102	41	36	5	20	0	102
Possible		26	3	5	8	10	0	26
TOTAL	129	142	52	46	13	31	0	141
MADERA								
Probable		5	1	4	0	0	3	2
Possible		3	0	2	1	0	1	2
TOTAL	5	8	1	6	1	0	4	4
MARIN								
Definite		1	1	0	0	0	0	1
Probable		1	0	1	0	0	0	1
TOTAL	2	2	1	1	0	0	0	2
MARIPOSA								
Probable		1	1	0	0	0	0	1
TOTAL	1	1	1	0	0	0	0	1
MENDOCINO								
Probable		2	1	0	0	1	0	2
Possible		1	0	0	0	1	0	1
TOTAL	3	3	1	0	0	2	0	3
MERCED								
Definite		1	1	0	0	0	1	0
Probable		6	3	1	1	1	0	6
Possible		1	0	1	0	0	0	1
TOTAL	7	8	4	2	1	1	1	7
MONTEREY								

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		3	3	0	0	0	0	3
Probable		48	4	41	3	0	41	7
Possible		4	1	0	2	1	3	1
TOTAL	15	55	8	41	5	1	44	11
NAPA								
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
ORANGE								
Definite		4	3	0	0	1	0	4
Probable		14	9	2	0	3	0	14
Possible		3	2	0	1	0	0	3
TOTAL	21	21	14	2	1	4	0	21
PLACER								
Definite		2	2	0	0	0	0	2
Probable		3	1	1	0	1	0	3
Possible		2	1	0	0	1	0	2
TOTAL	6	7	4	1	0	2	0	7
RIVERSIDE								
Definite		5	3	1	1	0	0	5
Probable		26	11	8	2	5	1	25
Possible		12	4	1	0	7	0	12
TOTAL	42	43	18	10	3	12	1	42
SACRAMENTO								
Definite		3	2	0	0	1	0	3
Probable		9	4	2	1	2	0	9
Possible		7	1	2	0	4	0	7
TOTAL	19	19	7	4	1	7	0	19
SAN BENITO								
Definite		1	0	1	0	0	1	0
Probable		1	1	0	0	0	0	1
TOTAL	2	2	1	1	0	0	1	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
SAN BERNARDINO								
Definite		11	8	3	0	0	0	11
Probable		52	15	31	4	2	0	52
Possible		8	0	4	1	3	0	8
TOTAL	31	71	23	38	5	5	0	71
SAN DIEGO								
Definite		8	7	0	1	0	0	8
Probable		40	14	14	1	11	0	40
Possible		6	2	2	0	2	0	6
TOTAL	47	54	23	16	2	13	0	54
SAN FRANCISCO								
Definite		1	1	0	0	0	0	1
Probable		4	4	0	0	0	0	4
TOTAL	5	5	5	0	0	0	0	5
SAN JOAQUIN								
Definite		4	3	0	0	1	0	4
Probable		37	19	14	1	3	22	15
Possible		4	1	1	1	1	1	3
TOTAL	28	45	23	15	2	5	23	22
SAN LUIS OBISPO								
Definite		1	1	0	0	0	0	1
Probable		4	0	3	1	0	1	3
Possible		1	0	0	1	0	0	1
TOTAL	6	6	1	3	2	0	1	5
SAN MATEO								
Probable		2	0	1	0	1	0	2
Possible		1	0	0	1	0	0	1
TOTAL	3	3	0	1	1	1	0	3
SANTA BARBARA								
Definite		3	2	0	0	1	2	1
Probable		33	7	24	1	1	24	9
TOTAL	15	36	9	24	1	2	26	10
SANTA CLARA								

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		5	2	2	0	1	0	5
Probable		11	4	4	0	3	0	11
Possible		4	1	0	2	1	0	4
TOTAL	20	20	7	6	2	5	0	20
SANTA CRUZ								
Definite		2	2	0	0	0	0	2
Probable		3	3	0	0	0	0	3
TOTAL	5	5	5	0	0	0	0	5
SHASTA								
Probable		3	1	0	1	1	0	3
Possible		2	0	2	0	0	0	2
TOTAL	5	5	1	2	1	1	0	5
SIERRA								
Probable		1	1	0	0	0	0	1
TOTAL	1	1	1	0	0	0	0	1
SISKIYOU								
Probable		2	1	0	0	1	0	2
TOTAL	2	2	1	0	0	1	0	2
SOLANO								
Probable		2	0	2	0	0	0	2
TOTAL	2	2	0	2	0	0	0	2
SONOMA								
Definite		1	1	0	0	0	0	1
Probable		5	1	4	0	0	1	4
TOTAL	6	6	2	4	0	0	1	5
STANISLAUS								
Definite		1	1	0	0	0	0	1
Probable		23	6	16	0	1	13	10
Possible		17	1	3	12	1	12	5
TOTAL	20	41	8	19	12	2	25	16
SUTTER								
Probable		8	1	6	0	1	6	2
Possible		1	0	0	0	1	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
TOTAL	5	9	1	6	0	2	7	2
TEHAMA								
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
TULARE								
Definite		5	3	1	0	1	3	2
Probable		19	6	4	2	7	1	17
Possible		1	0	0	0	1	0	1
TOTAL	22	25	9	5	2	9	4	20
VENTURA								
Definite		1	0	1	0	0	0	1
Probable		8	4	4	0	0	3	5
Possible		4	1	0	2	1	0	4
TOTAL	13	13	5	5	2	1	3	10
YOLO								
Probable		2	1	1	0	0	0	2
TOTAL	2	2	1	1	0	0	0	2
YUBA								
Probable		3	3	0	0	0	0	3
Possible		1	0	0	0	1	1	0
TOTAL	4	4	3	0	0	1	1	3

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, 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.

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.