

**Table D1: Summary of Illness/Injury Incidents
Reported in California¹ Related to Pesticide Exposure,
Summarized Statewide and by County of Occurrence
2018**

Statewide

Relationship ²	TOTAL EPISODES ³	TOTAL CASES	Type of Exposure ⁴				Intended Use ⁵	
			Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
TOTALS								
Definite		121	88	19	1	13	16	105
Probable		767	214	314	89	150	225	537
Possible		190	22	35	59	74	46	142
TOTAL	779	1078	324	368	149	237	287	784

County of Occurrence⁶

Relationship ²	TOTAL EPISODES ³	TOTAL CASES	Type of Exposure ⁴				Intended Use ⁵	
			Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
ALAMEDA								
Definite		3	3	0	0	0	0	3
Probable		12	9	0	1	2	0	12
Possible		8	4	1	2	1	0	8
TOTAL	20	23	16	1	3	3	0	23
AMADOR								
Possible		1	0	0	1	0	0	1
TOTAL	1	1	0	0	1	0	0	1
BUTTE								
Definite		1	1	0	0	0	1	0
Probable		5	4	1	0	0	1	4
Possible		2	0	1	0	1	0	2
TOTAL	8	8	5	2	0	1	2	6
CALAVERAS								
Definite		1	0	0	0	1	0	1
TOTAL	1	1	0	0	0	1	0	1

Relationship ²	TOTAL EPISODES ³	TOTAL CASES	Type of Exposure ⁴				Intended Use ⁵	
			Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
COLUSA								
Probable		2	0	2	0	0	1	1
TOTAL	2	2	0	2	0	0	1	1
CONTRA COSTA								
Definite		4	3	1	0	0	0	4
Probable		7	4	3	0	0	0	7
Possible		2	0	2	0	0	0	2
TOTAL	13	13	7	6	0	0	0	13
DEL NORTE								
Probable		2	0	0	0	2	0	2
TOTAL	2	2	0	0	0	2	0	2
EL DORADO								
Definite		2	2	0	0	0	0	2
Probable		1	0	0	0	1	0	1
TOTAL	3	3	2	0	0	1	0	3
FRESNO								
Definite		8	4	4	0	0	4	4
Probable		112	33	65	4	10	71	40
Possible		5	0	1	1	3	2	3
TOTAL	36	125	37	70	5	13	77	47
HUMBOLDT								
Probable		2	0	0	0	2	0	2
Possible		2	0	0	0	2	0	2
TOTAL	4	4	0	0	0	4	0	4
IMPERIAL								
Definite		6	4	2	0	0	4	2
Probable		1	0	1	0	0	1	0
Possible		2	0	1	1	0	0	2
TOTAL	8	9	4	4	1	0	5	4
KERN								
Definite		3	2	1	0	0	0	3
Probable		53	14	22	12	5	30	23

Relationship ²	TOTAL EPISODES ³	TOTAL CASES	Type of Exposure ⁴				Intended Use ⁵	
			Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
Possible		15	3	1	3	8	6	9
TOTAL	46	71	19	24	15	13	36	35
KINGS								
Probable		4	2	2	0	0	3	1
Possible		2	0	1	0	1	0	1
TOTAL	6	6	2	3	0	1	3	2
LAKE								
Definite		1	1	0	0	0	0	1
Possible		1	0	1	0	0	0	1
TOTAL	2	2	1	1	0	0	0	2
LOS ANGELES								
Definite		25	17	5	0	3	0	25
Probable		116	36	19	27	34	0	116
Possible		34	4	8	7	15	0	34
TOTAL	153	175	57	32	34	52	0	175
MADERA								
Probable		6	1	2	1	2	3	2
Possible		3	1	1	0	1	2	1
TOTAL	9	9	2	3	1	3	5	3
MARIN								
Probable		2	0	0	0	2	0	2
TOTAL	2	2	0	0	0	2	0	2
MARIPOSA								
Probable		2	2	0	0	0	0	2
TOTAL	2	2	2	0	0	0	0	2
MENDOCINO								
Definite		3	3	0	0	0	0	3
Probable		2	1	1	0	0	0	2
Possible		4	0	0	3	1	0	4
TOTAL	9	9	4	1	3	1	0	9
MERCED								
Definite		1	1	0	0	0	1	0
Probable		10	4	3	0	3	2	8

Relationship ²	TOTAL EPISODES ³	TOTAL CASES	Type of Exposure ⁴				Intended Use ⁵	
			Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
Possible		4	1	2	0	1	1	3
TOTAL	15	15	6	5	0	4	4	11
MONO								
Probable		1	0	1	0	0	0	1
TOTAL	1	1	0	1	0	0	0	1
MONTEREY								
Definite		5	5	0	0	0	0	5
Probable		69	3	58	4	4	59	9
Possible		9	1	1	4	3	6	3
TOTAL	28	83	9	59	8	7	65	17
NEVADA								
Probable		1	1	0	0	0	0	1
TOTAL	1	1	1	0	0	0	0	1
ORANGE								
Definite		4	1	2	0	1	0	4
Probable		42	12	10	10	10	0	42
Possible		9	0	1	1	7	0	9
TOTAL	49	55	13	13	11	18	0	55
PLACER								
Probable		1	0	0	0	1	0	1
TOTAL	1	1	0	0	0	1	0	1
RIVERSIDE								
Definite		4	4	0	0	0	0	4
Probable		45	5	15	7	18	1	43
Possible		7	1	0	2	4	1	6
TOTAL	53	56	10	15	9	22	2	53
SACRAMENTO								
Definite		4	4	0	0	0	0	4
Probable		8	3	1	1	3	0	8
Possible		2	0	0	0	2	0	2
TOTAL	14	14	7	1	1	5	0	14
SAN BENITO								
Definite		2	2	0	0	0	1	1

Relationship ²	TOTAL EPISODES ³	TOTAL CASES	Type of Exposure ⁴				Intended Use ⁵	
			Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
Probable		3	1	1	0	1	1	2
TOTAL	5	5	3	1	0	1	2	3
SAN BERNARDINO								
Definite		1	1	0	0	0	0	1
Probable		40	15	12	1	12	0	40
Possible		5	0	0	2	3	0	5
TOTAL	45	46	16	12	3	15	0	46
SAN DIEGO								
Definite		12	7	1	1	3	0	12
Probable		39	13	8	9	9	0	39
Possible		9	1	0	5	3	0	9
TOTAL	52	60	21	9	15	15	0	60
SAN FRANCISCO								
Definite		1	0	1	0	0	0	1
Probable		5	2	2	1	0	0	5
Possible		2	0	0	1	1	0	2
TOTAL	7	8	2	3	2	1	0	8
SAN JOAQUIN								
Definite		5	3	0	0	2	2	3
Probable		21	9	6	0	6	5	16
Possible		13	2	7	3	1	11	2
TOTAL	26	39	14	13	3	9	18	21
SAN LUIS OBISPO								
Definite		1	0	0	0	1	0	1
Probable		9	2	4	0	3	3	6
Possible		2	0	1	1	0	0	2
TOTAL	10	12	2	5	1	4	3	9
SAN MATEO								
Definite		2	2	0	0	0	0	2
Probable		5	1	2	1	1	0	5
Possible		4	1	0	2	1	0	4
TOTAL	11	11	4	2	3	2	0	11

Relationship ²	TOTAL EPISODES ³	TOTAL CASES	Type of Exposure ⁴				Intended Use ⁵	
			Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
SANTA BARBARA								
Definite		1	1	0	0	0	0	1
Probable		13	4	1	6	2	5	8
TOTAL	11	14	5	1	6	2	5	9
SANTA CLARA								
Definite		7	6	1	0	0	1	6
Probable		30	5	22	1	2	1	29
Possible		4	1	0	2	1	0	4
TOTAL	23	41	12	23	3	3	2	39
SANTA CRUZ								
Probable		4	1	1	1	1	1	3
Possible		2	1	0	1	0	0	2
TOTAL	6	6	2	1	2	1	1	5
SHASTA								
Probable		4	0	1	0	3	0	4
TOTAL	4	4	0	1	0	3	0	4
SISKIYOU								
Probable		1	1	0	0	0	0	1
TOTAL	1	1	1	2	0	6	0	9
SOLANO								
Definite		1	1	0	0	0	0	1
Probable		12	0	9	1	2	9	3
Possible		1	0	0	1	0	0	1
TOTAL	6	14	1	9	2	2	9	5
SONOMA								
Definite		5	4	0	0	1	0	5
Probable		5	3	2	0	0	1	4
Possible		5	0	1	1	3	0	5
TOTAL	15	15	7	3	1	4	1	14
STANISLAUS								
Probable		25	4	16	0	5	7	18
Possible		12	1	3	3	5	4	8
TOTAL	20	37	5	19	3	10	11	26

Relationship ²	TOTAL EPISODES ³	TOTAL CASES	Type of Exposure ⁴				Intended Use ⁵	
			Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
SUTTER								
Definite		1	1	0	0	0	0	1
Probable		3	2	1	0	0	0	3
TOTAL	4	4	3	1	0	0	0	4
TEHAMA								
Probable		1	1	0	0	0	0	1
Possible		1	0	0	0	1	0	0
TOTAL	2	2	1	0	0	1	0	1
TULARE								
Definite		2	1	0	0	1	0	2
Probable		20	6	13	1	0	13	7
Possible		6	0	0	3	3	4	2
TOTAL	19	28	7	13	4	4	17	11
TUOLUMNE								
Probable		1	1	0	0	0	0	1
TOTAL	1	1	1	0	0	0	0	1
VENTURA								
Definite		2	1	1	0	0	0	2
Probable		10	7	2	0	1	2	8
Possible		3	0	1	0	2	0	3
TOTAL	11	15	8	4	0	3	2	13
YOLO								
Definite		2	2	0	0	0	1	1
Probable		2	1	0	0	1	0	1
Possible		9	0	0	9	0	9	0
TOTAL	5	13	3	0	9	1	10	2
YUBA								
Definite		1	1	0	0	0	1	0
Probable		8	1	5	0	2	5	3
TOTAL	6	9	2	5	0	2	6	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. Episode: An incident in which a one or more people (*cases*) experience pesticide exposure from a particular source.

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.

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, vapors, 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 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) 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.