

**Table C2: Cases Reported in California¹ with Documented² Pesticide Exposure,
Summarized by the Type of Illness and the Type of Pesticides
2021**

Type of Illness ³	Antimicrobials ⁴		Cholinesterase Inhibitors ⁴		Fumigants ⁴		Other Pesticides ⁴		Total ⁶
	Occupational ⁵	Non-Occupational ⁵	Occupational ⁵	Non-Occupational ⁵	Occupational ⁵	Non-Occupational ⁵	Occupational ⁵	Non-Occupational ⁵	
Systemic									
Systemic Only	6	38	16	11	1	7	42	94	216
Systemic with Respiratory Effects	22	39	7	4	3	3	41	51	171
Systemic with Topical Effects	6	9	3	0	3	0	22	19	62
Systemic with Respiratory and Topical Effects	8	13	10	1	9	0	12	18	72
Respiratory									
Respiratory Only	22	46	1	0	1	0	7	29	107
Respiratory with Topical Effects	13	8	0	0	2	0	9	17	49
Topical									
Eye Only	38	17	1	1	10	0	19	17	104
Skin Only	14	4	0	0	1	0	8	21	49
Eye and Skin	3	8	1	1	1	0	7	6	27
Asymptomatic									
Asymptomatic	7	9	8	0	9	0	73	2	108
TOTAL⁶	140	191	47	18	40	10	241	274	967

1. Source: California Department of Pesticide Regulation, Pesticide Illness Surveillance Program.

2. Documented Pesticide Exposure: Includes cases classified as definitely, probably, or possibly related to pesticide exposure, as well as documented pesticide exposure that did not result in 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. Type of Illness: Categorization of the type of symptoms experienced.

Systemic: Any health effects not limited to the respiratory tree, skin, and/or eyes. Cases involving multiple illness symptom types including systemic symptoms are included in the systemic category.

Respiratory: Health effects involving any part of the respiratory tree.

Topical: Health effects involving only the eyes and/or skin. This excludes outward physical signs (e.g., miosis, lacrimation) related to effects on internal bodily systems. These signs are classified under ‘Systemic.’

Asymptomatic: Exposure occurred, but did not result in illness/injury. Cholinesterase depression without symptoms falls in this category.

Unknown: Illness apparently occurred, but the specific nature of the illness could not be determined.

4. Type of Pesticide: Type of pesticide based on functional class.

Antimicrobials: Pesticides used to kill or inactivate microbiological organisms (e.g., bacteria, viruses).

Cholinesterase Inhibitors: Pesticides known to inhibit the function of the cholinesterase enzyme. Illness types involving cholinesterase inhibitors that are fumigants and vice versa are accounted for in each respective column.

Fumigants: Pesticide in gas or vapor formulation that is released into the air or injected into the application site. Illness types involving fumigants that are cholinesterase inhibitors and vice versa are accounted for in each respective column.

Other Pesticides: Any pesticide that is not an antimicrobial, cholinesterase-inhibiting pesticide, or fumigant.

5. Occupational or Non-Occupational: The relationship between the illness/injury and the individual's work.

Occupational: Work related. The individual was on the job at the time of the incident. This includes both paid employees and volunteers working in similar capacity to paid employees.

Non-Occupational: Not work related. The individual was not on the job at the time of the incident. This category includes individuals on the way to or from work (e.g., before the start of the workday, after the end of the workday).

6. Totals include nine cases which the activity could not be determined as occupational or non-occupational, or specific illness type was not reported. Illness type involving a cholinesterase inhibitor that is a fumigant or vice versa is counted as one case in the total.

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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.