Table C6: Illnesses and Injuries Reported in California[1] Associated With[2] Pesticide Exposure, Summarized by Pesticide(s) and Type of Illness
2019

Pesticide[3]	Systemic/ Respiratory[4]		Topical[4]		Total	
	Definite/ Probable	Possible	Definite/ Probable	Possible	Definite/ Probable	Possible
Organophosphates						
Acephate	4	0	0	0	4	0
DDVP	1	1	0	0	2	1
Diazinon	1	0	0	0	1	0
Malathion	3	0	0	0	3	0
N-Methyl Carbamates						
Carbaryl	1	1	1	1	2	4
Carbofuran	2	1	0	0	5	1
Methomyl	1	0	0	0	1	0
Pyrethrins and Pyrethroids						
Beta-Cyfluthrin	0	0	2	1	2	1
Bifenthrin	2	0	7	0	10	0
Cyfluthrin	0	0	0	1	0	1
Cypermethrin	11	0	3	0	23	0
Deltamethrin	2	2	0	2	4	4
Gamma-Cyhalothrin	4	1	2	0	7	1
Lambda-Cyhalothrin	4	0	5	1	10	1
Permethrin	4	1	2	0	6	1
Other Pesticides						
1,3-Dichloropropene	5	1	0	0	5	1
Abamectin	1	0	0	0	1	0
Alkyl Amino Propane	0	0	2	0	2	0
Aluminum Phosphide	1	1	0	0	1	1
Bacillus Thuringiensis	0	0	0	0	0	1
Borax	1	0	0	0	1	0
Boric Acid	3	4	1	0	5	4
Brodifacoum	0	1	0	0	0	1

Pesticide[3]	Systemic/ Respiratory[4]		Topical[4]		Total	
	Definite/ Probable	Possible	Definite/ Probable	Possible	Definite/ Probable	Possible
Bromethalin	1	0	0	0	1	0
Calcium Hypochlorite	2	0	1	0	4	0
Capsaicin	1	0	0	0	2	0
Chlorinated-Cyanuric Acid	2	0	3	0	9	0
Chlorine	1	0	0	0	1	0
Chlorothalonil	1	0	0	0	1	0
Cholecalciferol	1	1	0	0	1	1
Copper Naphthenate	1	0	1	0	2	0
Cyanuric Acid	0	0	0	0	2	0
Cycloate	0	1	0	0	0	1
Deet	1	2	2	1	5	3
Diatomaceous Earth	1	1	0	0	1	1
Dinotefuran	1	0	0	0	1	0
Diphacinone	1	0	1	0	2	0
Endothall	0	0	1	0	1	0
Fipronil	2	1	0	0	2	1
Glycolic Acid	0	0	1	0	1	0
Glyphosate	3	1	2	0	5	1
Halogenated Hydantoins	1	0	0	0	1	0
Halosulfuron-methyl	0	1	0	0	0	1
Hexythiazox	1	0	0	0	1	0
Hydrogen Chloride	8	0	3	1	13	1
Hydrogen Peroxide	0	0	1	1	1	1
Hypochlorous Acid	0	0	2	0	2	0
Imidacloprid	1	0	1	0	2	0
Indoxacarb	0	0	1	0	1	0
Iprodione	1	0	0	0	1	0
K Salts Of Fatty Acids	0	0	0	1	0	1
Lime-sulfur	1	0	0	0	1	0
Metam-sodium	4	0	0	0	4	0
Methyl Bromide	2	0	0	0	2	0

Pesticide[3]	Systemic/ Respiratory[4]		Topical[4]		Total	
	Definite/ Probable	Possible	Definite/ Probable	Possible	Definite/ Probable	Possible
Myrothecium Verrucaria AARC-0255, Dried	0	0	0	1	0	1
Neem Oil	1	0	1	0	2	1
Nonanoic Acid	0	0	1	0	1	0
Oxadiazon	1	0	0	0	1	0
Para-Dichlorobenzene	0	0	0	0	1	0
Penthiopyrad	1	0	0	0	1	0
Peroxyacetic Acid	0	0	1	0	1	0
Phosphine	3	0	0	0	3	0
Prallethrin	1	0	0	0	1	0
Pseudomonas chlororaphis	5	0	0	0	5	0
Quaternary Ammonia	12	2	25	0	39	2
Sodium Chlorite	0	0	0	0	1	0
Sodium Hypochlorite	60	7	39	1	118	9
Sulfur	5	1	2	0	8	1
Sulfuryl Fluoride	4	9	0	0	4	12
Combinations of Antimicrobials	18	2	11	2	44	4
Combinations of Fumigants	16	0	15	0	33	0
Combinations of Fungicides	1	0	1	1	2	1
Combinations of Herbicides	25	11	9	0	38	12
Combinations of Insecticides Including ChE Inhibitor(s)	15	4	5	0	21	4
Combinations of Insecticides Without ChE Inhibitor(s)	60	17	12	4	91	26
Miscellaneous Combinations	217	23	13	0	316	30
Unknown Antimicrobials	5	1	21	1	36	2
Unknown Fumigants	0	0	0	0	1	0
Unknown Herbicides	5	1	0	1	5	2
Unknown Insecticides	56	13	18	2	91	18
Unknown Pesticides	2	4	2	0	5	4
TOTAL	**602**	**117**	**221**	**23**	**1034**	**164**

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

2. Associated With: Includes cases classified as definitely, probably, or possibly related to pesticide exposure.

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

4. 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.

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.