Table C11: Illnesses and Injuries Reported in California[1] Associated With[2] Pesticide Exposure, Summarized by Type of Equipment, Type of Handler Activity, and Occupational Status 2022

Occupational[3]

Type of Equipment[5]	Type of Handler Activity[4]			
	Mixer/ Loader	Applicator	Mechanical	Total[6]
Hand, Other or Unspecified	0	5	0	5
Pressurized Hose-line Sprayers	0	5	0	5
Hand Pump Sprayer	0	2	0	2
Back Pack Sprayer	0	5	1	6
Unpressurized Hand-held Spray Equipment	0	6	0	6
Foggers	0	1	0	1
Tarp	0	0	0	1
Tape and Seal	0	1	0	1
Automatic Equipment, Other or Unspecified	8	0	0	9
Automatic Equipment, Chlorinators	1	1	2	5
Drip Irrigation Equipment	0	6	0	6
Manual Application Methods, Other or Unspecified	5	0	0	5
Immersion Equipment	0	2	0	2
Implements with Handles	0	5	0	5
Implements without Handles	0	4	0	5
Manual Placement	13	9	0	22
Other	0	6	0	6
Not Applicable	3	3	2	10
Unknown	2	15	0	19
Total Occupational Cases	**32**	**76**	**5**	**121**

Non-Occupational[3]

Type of Equipment[5]	Type of Handler Activity[4]			
	Mixer/ Loader	Applicator	Mechanical	Total[6]
Hand, Other or Unspecified	0	34	0	34
Hand Pump Sprayer	0	4	0	5
Back Pack Sprayer	0	1	0	1
Unpressurized Hand-held Spray Equipment	0	9	0	10
Aerosol Can	0	17	0	17
Foggers	0	11	0	11
Manual Application Methods, Other or Unspecified	1	10	0	11
Implements with Handles	0	7	0	7
Implements without Handles	0	5	0	5
Manual Placement	4	37	0	42
Other	0	12	0	12
Not Applicable	0	2	0	6
Unknown	3	41	0	46
Total Non-Occupational Cases	**8**	**190**	**0**	**207**
TOTAL CASES[6]	**40**	**268**	**5**	**330**

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 Definite or Probable relationship.

3. 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).

4. Type of Activity: Activity of the injured individual at the time of exposure.

Mixer/Loader:	Mixes and/or loads pesticides. This includes: 1) removing a pesticide from its original container; 2) transferring the pesticide to a mixing or holding tank; 3) mixing pesticides prior to application; 4) driving a nurse rig; or 5) transferring the pesticide from a mix/holding tank or nurse rig to an application tank.
Applicator:	Applies pesticides by any method or conducts activities considered ancillary to the application (e.g., cleans spray nozzles in the field).
Mechanical:	Maintains (e.g., cleans, repairs, conducts maintenance) pesticide contaminated equipment used to mix, load, or apply pesticides, as well as the protective equipment used by individuals involved in such activities. This excludes the following: 1) maintenance performed by applicators on their equipment incidental to the application; 2) maintenance performed by mixer/loaders on their equipment incidental to mixing and loading; 3) decontamination by HAZMAT teams.

5. Type of Equipment Used: Defines the type of application equipment regardless of who performed the application. If a type of equipment is not represented on the table, there were no cases involving that type of equipment for the year of the report.

Hand, Other or Unspecified:	Hand-held application equipment, other or unspecified. The equipment must propel the pesticide from a reservoir. This includes 1) hose-end sprayers, and 2) two or more types of hand-held application equipment. This excludes hand-held equipment already specified above.
Pressurized Hose-Line Sprayers:	Hand-held spray equipment attached by a long hose to a power-pressurized tank. This excludes hose-end sprayers, which are classified under hand, other or unspecified.
Hand Pump Sprayer:	Hand-held compressed air sprayer with small volume tanks (1 to 5 gallons). This excludes backpack sprayers.
Back Pack Sprayer:	Compressed air sprayer where the tank is worn on the back of the applicator.
Unpressurized Hand-Held Spray Equipment:	Hand-held spray bottles (usually plastic) with built-in finger triggers.
Aerosol Can:	Disposable pressurized cans designed for intermittent use. The pesticide is propelled out of the can by an inert compressed gas propellant. This excludes foggers.

Foggers:	Disposable pressurized cans designed for the total release of the contents in a single use. The pesticide is propelled out of the can by an inert compressed gas propellant.
Tarp:	Tarp placed over a commodity or structure and designed to restrict a fumigant to the application site.
Tape and Seal:	A method of sealing a structure to restrict fumigant used to exterminate pests within an enclosed space.
Automatic Equipment, Other or Unspecified:	Equipment that automatically injects the pesticide to the target area. This includes equipment attached to milking machinery, dishwashers, etc. This excludes equipment already described above.
Automatic Equipment, Chlorinators:	Chlorination units that automatically inject chlorine into water for disinfection purposes. This includes chlorinators for swimming pools, packing houses, and food processing plants.
Drip Irrigation Equipment:	Chemigation through drip irrigation equipment.
Manual Application Methods, Other or Unspecified:	Manual application methods, other or unspecified. The pesticide is not propelled by any type of equipment. This includes two or more types of manual application methods. This excludes manual application method already described above.
Immersion Equipment:	Tanks, trays, sinks, etc. used for the dipping of animals, produce, bulbs, medical equipment, dishes, pots and pans, etc.
Implements With Handles:	Mops, brushes, and other implements with handles.
Implements Without Handles:	Cloths, towels, rags, sponges, and other implements without handles.
Manual Placement:	Manual placement of a pesticide directly to a target site. This includes bait stations, hand tossed pellets, and direct pouring of a pesticide onto a target surface from a container (such as pouring liquid chlorine directly into swimming pool water). This excludes the placement of fumigation pellet packs in chambers and under tarps.
Other:	Any application methodology not described above. This includes two or more types of application equipment not elsewhere specified.
Not Applicable:	No application or mix/load equipment is involved.
Unknown:	The type of application or mix/load equipment is not known.

6. Totals include nineteen additional cases for which the activity could not be determined as occupational or non-occupational, or specific handler activity could not be determined.

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.