

**Table C3: Hospitalization and Disability Associated<sup>1</sup> with Illnesses/Injuries  
Definitely or Probably Related<sup>2</sup> to Pesticide Exposure in California,  
Summarized by Occupational Status and Activity  
2019**

**Occupational<sup>3</sup>**

Activity <sup>6</sup>	Total Cases	Hospitalization <sup>4</sup>			Disability <sup>5</sup>		
		No. Cases	%	Unknown <sup>7</sup>	No. Cases	%	Unknown <sup>8</sup>
Applicator	100	1	1	0	20	20	31
Emergency Response	3	0	0	0	0	0	2
Field Worker	294	1	0.3	0	17	5.8	22
Handler (Other or Unspecified)	4	0	0	0	1	25	1
Manufacturing/Formulation	7	0	0	0	2	28.6	3
Mechanical	3	0	0	0	0	0	1
Mixer/Loader	33	1	3	0	13	39.4	4
Other	30	1	3.3	0	7	23.3	6
Packaging/Processing	16	0	0	0	6	37.5	3
Routine	43	0	0	0	21	48.8	6
Transport/Storage/Disposal	11	0	0	0	3	27.3	5
Unknown	8	0	0	0	0	0	8
<b>Total Occupational</b>	<b>552</b>	<b>4</b>	<b>0.7</b>	<b>0</b>	<b>90</b>	<b>16.3</b>	<b>92</b>

**Non-Occupational<sup>3</sup>**

Activity <sup>6</sup>	Total Cases	Hospitalization <sup>4</sup>			Disability <sup>5</sup>		
		No. Cases	%	Unknown <sup>7</sup>	No. Cases	%	Unknown <sup>8</sup>
Applicator	166	6	3.6	0	8	4.8	76
Handler (Other or Unspecified)	4	0	0	0	0	0	3
Mechanical	1	0	0	0	0	0	0
Mixer/Loader	15	1	6.7	0	1	6.7	7
Other	69	5	7.2	0	5	7.2	48
Routine	191	1	0.5	1	5	2.6	68
Transport/Storage/Disposal	2	0	0	0	0	0	0
Unknown	28	1	3.6	0	1	3.6	22
<b>Total Non-Occupational</b>	<b>476</b>	<b>14</b>	<b>2.9</b>	<b>1</b>	<b>20</b>	<b>4.2</b>	<b>224</b>
<b>TOTAL CASES<sup>9</sup></b>	<b>1034</b>	<b>18</b>	<b>1.7</b>	<b>1</b>	<b>110</b>	<b>10.6</b>	<b>320</b>

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

**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.

**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. Hospitalization:** Count of number of cases in which an individual was hospitalized at least one full day (24-hour period).

**5. Disability:** Count of number of cases in which an individual missed at least one full day (24-hour period) of work or other normal activity, such as school.

**6. Type of Activity:** Activity of the injured individual at the time of exposure

**Applicator:** Applies pesticides by any method or conducts activities considered ancillary to the application (e.g., cleans spray nozzles in the field).

**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.

**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.

**Handler (Other of Unspecified):** Assists with tasks following an application (i.e., tarp removal during a structural application or soil fumigation, and not ancillary to the application or mix/load activity).

Packaging/ Processing:	Handles (packs, processes, or retails) agricultural commodities from the packing house to the final market place. Field packing of agricultural commodities is classified as field worker.
Field Worker:	Works in an agricultural field performing tasks such as advising, scouting, harvesting, thinning, irrigating, driving tractor (except as part of an application), field packing, conducting cultural work in a greenhouse, etc. Researchers performing similar tasks in an agricultural field are also included.
Routine:	Combination of 3 Routine Activities: <ul style="list-style-type: none"> <li>a. Routine Indoor: Conducts activities in an indoor environment with minimal expectation for exposure to pesticides. This includes people in offices and businesses, residential structures, etc. who are not handling pesticides.</li> <li>b. Routine Outdoor: Conducts activities in an outdoor environment with minimal expectation for exposure to pesticides. This excludes field workers in agricultural fields. This includes gardeners who are not handling pesticides.</li> <li>c. Routine (Other/Unspecified): Conducts activities in an environment with minimal expectation for exposure to pesticides but is not adequately defined as indoor or outdoor. This includes individuals exposed to pesticides while inside a vehicle.</li> </ul>
Manufacturing and Formulation:	Manufactures, processes, or packages pesticides. This includes “mixing” if it is done in a plant for application elsewhere.
Transport/ Storage/ Disposal:	Transports or stores pesticides between packaging and preparation for use. This includes shipping, warehousing, and retailing, as well as storage by the end-user prior to preparation for use. Disposal of unused pesticides is also included in this activity. This excludes driving a nurse rig to an application site.
Emergency Response:	Emergency response personnel (police, fire, ambulance, and HAZMAT personnel) responding to a fire, spill, accident, or any other pesticide incident in the line of duty.
Other:	Activity is not adequately described by any other activity category. This includes but is not limited to: 1) dog groomers not handling pesticides; 2) individuals handling pesticide treated wood; 3) two or more activities with potential for pesticide exposure.
Unknown:	Activity is not known.

**7. Hospitalization Unknown:** Investigation did not specify whether hospitalization occurred or not.

**8. Disability Unknown:** Investigation did not specify whether disability occurred or not.

**9.** Totals include six additional cases for which the activity could not be determined as occupational or non-occupational. The disability status of the four cases is unknown and none was hospitalized.

**Whom to Contact:**

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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.