

**Table D1: Summary of Illness/Injury Incidents  
Reported in California<sup>1</sup> Related to Pesticide Exposure,  
Summarized Statewide and by County of Occurrence  
2017**

**Statewide**

Relationship <sup>2</sup>	TOTAL EPISODES <sup>3</sup>	TOTAL CASES	Type of Exposure <sup>3</sup>				Intended Use <sup>4</sup>	
			Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
<b>TOTALS</b>								
Definite		149	78	40	4	27	32	117
Probable		988	189	362	191	246	402	584
Possible		205	13	42	45	105	48	153
<b>TOTAL</b>	<b>818</b>	<b>1342</b>	<b>280</b>	<b>444</b>	<b>240</b>	<b>378</b>	<b>482</b>	<b>854</b>

**County of Occurrence<sup>5</sup>**

Relationship <sup>2</sup>	TOTAL EPISODES <sup>3</sup>	TOTAL CASES	Type of Exposure <sup>3</sup>				Intended Use <sup>4</sup>	
			Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
<b>ALAMEDA</b>								
Definite		4	4	0	0	0	0	4
Probable		12	8	0	1	3	0	12
Possible		2	1	0	1	0	0	2
<b>TOTAL</b>	<b>17</b>	<b>18</b>	<b>13</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>18</b>
<b>BUTTE</b>								
Probable		6	1	1	0	4	2	4
Possible		1	0	0	0	1	0	1
<b>TOTAL</b>	<b>7</b>	<b>7</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>5</b>	<b>2</b>	<b>5</b>
<b>CALAVERAS</b>								
Probable		1	0	1	0	0	0	1
<b>TOTAL</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>
<b>COLUSA</b>								
Probable		1	1	0	0	0	1	0
<b>TOTAL</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>
<b>CONTRA COSTA</b>								
Definite		4	3	0	0	1	0	4
Probable		17	5	5	1	6	0	17

Relationship <sup>2</sup>	TOTAL EPISODES <sup>3</sup>	TOTAL CASES	Type of Exposure <sup>3</sup>				Intended Use <sup>4</sup>	
			Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
Possible		5	1	1	1	2	0	5
<b>TOTAL</b>	<b>26</b>	<b>26</b>	<b>9</b>	<b>6</b>	<b>2</b>	<b>9</b>	<b>0</b>	<b>26</b>
<b>DEL NORTE</b>								
Probable		1	1	0	0	0	0	1
<b>TOTAL</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>
<b>EL DORADO</b>								
Probable		3	1	2	0	0	0	3
Possible		2	0	0	0	2	0	2
<b>TOTAL</b>	<b>5</b>	<b>5</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>5</b>
<b>FRESNO</b>								
Definite		3	1	2	0	0	2	1
Probable		32	12	11	5	4	11	21
Possible		7	1	1	2	3	3	4
<b>TOTAL</b>	<b>32</b>	<b>42</b>	<b>14</b>	<b>14</b>	<b>7</b>	<b>7</b>	<b>16</b>	<b>26</b>
<b>GLENN</b>								
Possible		1	0	0	0	1	0	1
<b>TOTAL</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>
<b>HUMBOLDT</b>								
Definite		1	0	1	0	0	0	1
Probable		4	0	4	0	0	0	4
Possible		2	0	0	0	2	0	1
<b>TOTAL</b>	<b>7</b>	<b>7</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>6</b>
<b>IMPERIAL</b>								
Definite		7	3	0	0	4	0	7
Probable		3	0	1	0	2	2	1
Possible		2	0	0	1	1	1	1
<b>TOTAL</b>	<b>12</b>	<b>12</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>7</b>	<b>3</b>	<b>9</b>
<b>KERN</b>								
Definite		12	7	2	0	3	8	4
Probable		154	8	45	56	45	138	16
Possible		13	1	4	0	8	4	8
<b>TOTAL</b>	<b>43</b>	<b>179</b>	<b>16</b>	<b>51</b>	<b>56</b>	<b>56</b>	<b>150</b>	<b>28</b>

Relationship <sup>2</sup>	TOTAL EPISODES <sup>3</sup>	TOTAL CASES	Type of Exposure <sup>3</sup>				Intended Use <sup>4</sup>	
			Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
<b>KINGS</b>								
Definite		1	1	0	0	0	0	1
Probable		4	1	2	1	0	2	2
<b>TOTAL</b>	<b>4</b>	<b>5</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>3</b>
<b>LAKE</b>								
Probable		5	1	0	1	3	1	4
Possible		2	0	0	1	1	1	1
<b>TOTAL</b>	<b>5</b>	<b>7</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>4</b>	<b>2</b>	<b>5</b>
<b>LASSEN</b>								
Definite		1	0	1	0	0	0	1
Probable		1	0	1	0	0	0	1
<b>TOTAL</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>
<b>LOS ANGELES</b>								
Definite		18	13	3	0	2	0	18
Probable		132	35	18	16	63	0	132
Possible		30	1	3	10	16	0	30
<b>TOTAL</b>	<b>156</b>	<b>180</b>	<b>49</b>	<b>24</b>	<b>26</b>	<b>81</b>	<b>0</b>	<b>180</b>
<b>MADERA</b>								
Probable		46	0	29	3	14	41	5
Possible		4	0	0	1	3	3	1
<b>TOTAL</b>	<b>7</b>	<b>50</b>	<b>0</b>	<b>29</b>	<b>4</b>	<b>17</b>	<b>44</b>	<b>6</b>
<b>MARIN</b>								
Probable		1	1	0	0	0	0	1
<b>TOTAL</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>
<b>MARIPOSA</b>								
Probable		1	0	1	0	0	0	1
<b>TOTAL</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>
<b>MENDOCINO</b>								
Probable		1	0	1	0	0	0	1
Possible		1	0	0	0	1	0	1
<b>TOTAL</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>
<b>MERCED</b>								
Definite		7	2	3	1	1	3	4

Relationship <sup>2</sup>	TOTAL EPISODES <sup>1</sup>	TOTAL CASES	Type of Exposure <sup>3</sup>				Intended Use <sup>4</sup>	
			Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
Probable		9	0	7	1	1	7	1
Possible		6	0	4	2	0	3	3
<b>TOTAL</b>	<b>18</b>	<b>22</b>	<b>2</b>	<b>14</b>	<b>4</b>	<b>2</b>	<b>13</b>	<b>8</b>
<b>MONTEREY</b>								
Definite		6	3	3	0	0	5	1
Probable		96	3	74	18	1	88	8
Possible		14	2	10	2	0	11	3
<b>TOTAL</b>	<b>27</b>	<b>116</b>	<b>8</b>	<b>87</b>	<b>20</b>	<b>1</b>	<b>104</b>	<b>12</b>
<b>NAPA</b>								
Probable		5	1	2	0	2	2	3
<b>TOTAL</b>	<b>4</b>	<b>5</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>3</b>
<b>NEVADA</b>								
Probable		1	1	0	0	0	0	1
Possible		1	0	0	1	0	0	1
<b>TOTAL</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>
<b>ORANGE</b>								
Definite		9	4	3	0	2	0	9
Probable		39	13	7	7	12	0	39
Possible		6	0	0	3	3	0	6
<b>TOTAL</b>	<b>46</b>	<b>54</b>	<b>17</b>	<b>10</b>	<b>10</b>	<b>17</b>	<b>0</b>	<b>54</b>
<b>PLACER</b>								
Definite		4	3	0	0	1	0	4
Probable		1	0	0	0	1	0	1
<b>TOTAL</b>	<b>5</b>	<b>5</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>5</b>
<b>PLUMAS</b>								
Definite		1	1	0	0	0	0	1
Possible		1	0	0	0	1	0	1
<b>TOTAL</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>
<b>RIVERSIDE</b>								
Definite		8	4	2	1	1	0	8
Probable		65	21	20	11	13	16	49
Possible		6	0	1	2	3	1	5
<b>TOTAL</b>	<b>51</b>	<b>79</b>	<b>25</b>	<b>23</b>	<b>14</b>	<b>17</b>	<b>17</b>	<b>62</b>

Relationship <sup>2</sup>	TOTAL EPISODES <sup>1</sup>	TOTAL CASES	Type of Exposure <sup>3</sup>				Intended Use <sup>4</sup>	
			Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
<b>SACRAMENTO</b>								
Definite		7	5	1	0	1	0	7
Probable		19	5	6	4	4	0	19
Possible		8	2	1	1	4	0	7
<b>TOTAL</b>	<b>32</b>	<b>34</b>	<b>12</b>	<b>8</b>	<b>5</b>	<b>9</b>	<b>0</b>	<b>33</b>
<b>SAN BERNARDINO</b>								
Definite		4	2	0	0	2	0	4
Probable		41	17	6	4	14	0	41
Possible		3	0	2	1	0	0	3
<b>TOTAL</b>	<b>42</b>	<b>48</b>	<b>19</b>	<b>8</b>	<b>5</b>	<b>16</b>	<b>0</b>	<b>48</b>
<b>SAN DIEGO</b>								
Definite		10	3	3	1	3	1	9
Probable		37	8	8	11	10	0	37
Possible		20	1	1	6	12	1	19
<b>TOTAL</b>	<b>54</b>	<b>67</b>	<b>12</b>	<b>12</b>	<b>18</b>	<b>25</b>	<b>2</b>	<b>65</b>
<b>SAN FRANCISCO</b>								
Definite		4	2	2	0	0	0	4
Probable		6	4	0	1	1	0	6
Possible		2	0	0	0	2	0	2
<b>TOTAL</b>	<b>12</b>	<b>12</b>	<b>6</b>	<b>2</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>12</b>
<b>SAN JOAQUIN</b>								
Definite		6	3	1	0	2	1	5
Probable		19	3	9	1	6	7	12
Possible		7	0	3	1	3	2	5
<b>TOTAL</b>	<b>28</b>	<b>32</b>	<b>6</b>	<b>13</b>	<b>2</b>	<b>11</b>	<b>10</b>	<b>22</b>
<b>SAN LUIS OBISPO</b>								
Definite		4	4	0	0	0	0	4
Probable		4	2	1	0	1	0	4
Possible		7	0	5	0	2	6	1
<b>TOTAL</b>	<b>11</b>	<b>15</b>	<b>6</b>	<b>6</b>	<b>0</b>	<b>3</b>	<b>6</b>	<b>9</b>
<b>SAN MATEO</b>								
Definite		2	2	0	0	0	0	2
Probable		3	0	1	0	2	0	3

Relationship <sup>2</sup>	TOTAL EPISODES <sup>2</sup>	TOTAL CASES	Type of Exposure <sup>3</sup>				Intended Use <sup>4</sup>	
			Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
Possible		3	1	0	0	2	0	3
<b>TOTAL</b>	<b>8</b>	<b>8</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>8</b>
<b>SANTA BARBARA</b>								
Definite		2	2	0	0	0	0	2
Probable		11	4	2	1	4	3	8
Possible		4	0	0	2	2	0	4
<b>TOTAL</b>	<b>16</b>	<b>17</b>	<b>6</b>	<b>2</b>	<b>3</b>	<b>6</b>	<b>3</b>	<b>14</b>
<b>SANTA CLARA</b>								
Definite		2	2	0	0	0	0	2
Probable		18	8	8	1	1	0	18
Possible		3	0	0	0	3	1	2
<b>TOTAL</b>	<b>20</b>	<b>23</b>	<b>10</b>	<b>8</b>	<b>1</b>	<b>4</b>	<b>1</b>	<b>22</b>
<b>SANTA CRUZ</b>								
Definite		9	1	8	0	0	9	0
Probable		66	0	35	18	13	64	2
Possible		5	0	4	1	0	3	2
<b>TOTAL</b>	<b>8</b>	<b>80</b>	<b>1</b>	<b>47</b>	<b>19</b>	<b>13</b>	<b>76</b>	<b>4</b>
<b>SHASTA</b>								
Possible		2	0	0	1	1	0	2
<b>TOTAL</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>2</b>
<b>SOLANO</b>								
Definite		1	0	1	0	0	0	1
Probable		2	1	0	1	0	0	2
<b>TOTAL</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>3</b>
<b>SONOMA</b>								
Probable		13	5	5	0	3	2	11
Possible		3	0	0	0	3	3	0
<b>TOTAL</b>	<b>14</b>	<b>16</b>	<b>5</b>	<b>5</b>	<b>0</b>	<b>6</b>	<b>5</b>	<b>11</b>
<b>STANISLAUS</b>								
Definite		3	1	0	1	1	0	3
Probable		32	6	3	19	4	0	32
Possible		4	0	0	0	4	0	3
<b>TOTAL</b>	<b>18</b>	<b>39</b>	<b>7</b>	<b>3</b>	<b>20</b>	<b>9</b>	<b>0</b>	<b>38</b>

Relationship <sup>2</sup>	TOTAL EPISODES <sup>1</sup>	TOTAL CASES	Type of Exposure <sup>3</sup>				Intended Use <sup>4</sup>	
			Direct Contact	Drift	Residue	Other/Unknown	Agricultural	Non-Agricultural
<b>SUTTER</b>								
Definite		1	1	0	0	0	0	1
Probable		12	1	9	1	1	9	3
<b>TOTAL</b>	<b>6</b>	<b>13</b>	<b>2</b>	<b>9</b>	<b>1</b>	<b>1</b>	<b>9</b>	<b>4</b>
<b>TEHAMA</b>								
Probable		3	1	2	0	0	0	3
Possible		1	0	0	1	0	0	1
<b>TOTAL</b>	<b>3</b>	<b>4</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>4</b>
<b>TULARE</b>								
Definite		5	1	3	0	1	3	2
Probable		13	4	3	1	5	1	11
Possible		11	1	1	0	9	2	9
<b>TOTAL</b>	<b>23</b>	<b>29</b>	<b>6</b>	<b>7</b>	<b>1</b>	<b>15</b>	<b>6</b>	<b>22</b>
<b>TUOLUMNE</b>								
Probable		1	0	0	0	1	0	1
Possible		2	0	1	0	1	0	2
<b>TOTAL</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>3</b>
<b>VENTURA</b>								
Definite		3	0	1	0	2	0	3
Probable		39	4	29	4	2	5	34
Possible		8	0	0	3	5	1	7
<b>TOTAL</b>	<b>17</b>	<b>50</b>	<b>4</b>	<b>30</b>	<b>7</b>	<b>9</b>	<b>6</b>	<b>44</b>
<b>YOLO</b>								
Probable		5	1	2	2	0	0	5
Possible		5	1	0	1	3	2	3
<b>TOTAL</b>	<b>8</b>	<b>10</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>8</b>
<b>YUBA</b>								
Probable		3	1	1	1	0	0	3
Possible		1	0	0	0	1	0	1
<b>TOTAL</b>	<b>4</b>	<b>4</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>4</b>

**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.

‡- An *episode* is 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](http://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.