## Use Trends of Cholinesterase-Inhibiting Pesticides: Cumulative Acres Treated

Text files of data are available at [https://files.cdpr.ca.gov/pub/outgoing/pur/data/](https://files.cdpr.ca.gov/pub/outgoing/pur/data/). The reported cumulative acres treated with chemicals that are organophosphorus or carbamate cholinesterase-inhibiting pesticides. Use includes primarily agricultural applications (Most nonagricultural pesticide use reports are not required to report acreage. A zero indicates some nonagricultural use occurred, but acreage was not reported. The word "none" indicates no use at all that year). The grand total for acres treated may be less than the sum of acres treated for all chemicals because some products contain more than one active ingredient.

| Chemical | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 3-iodo-2-propynyl butylcarbamate | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8 | 5 |
| acephate | 144,134 | 150,268 | 132,428 | 183,388 | 122,703 | 163,104 | 172,589 | 177,380 | 158,478 | 156,411 |
| aldicarb | 66,192 | 29,363 | 1,451 | 1,882 | 166 | None | None | None | None | None |
| azinphos-methyl | 1,724 | 1,809 | 1,639 | 25 | None | 1 | None | 0 | None | None |
| bendiocarb | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| bensulide | 78,736 | 84,201 | 79,197 | 84,611 | 85,657 | 94,185 | 79,317 | 77,374 | 85,843 | 84,747 |
| butylate | 60 | None | None | 20 | 12 | None | 8 | None | None | None |
| carbaryl | 81,683 | 68,469 | 97,229 | 96,667 | 108,805 | 136,319 | 116,667 | 106,736 | 99,449 | 97,953 |
| carbofuran | 15 | 30 | None | None | None | None | None | None | None | None |
| carbophenothion | 107 | 12 | 31 | None | None | None | None | 1 | None | None |
| chlorpyrifos | 1,099,064 | 1,189,181 | 1,056,329 | 1,297,547 | 1,108,167 | 829,304 | 641,561 | 690,841 | 431,961 | 6,957 |
| coumaphos | 0 | 0 | 0 | 1 | None | 62 | None | 0 | 1 | None |
| crotoxyphos | None | None | None | None | None | None | 0 | None | None | None |
| cycloate | 13,799 | 14,895 | 17,565 | 16,045 | 19,124 | 21,037 | 23,173 | 23,962 | 20,943 | 23,472 |
| ddvp | 1,880 | 5,184 | 6,530 | 5,593 | 3,307 | 6,282 | 3,317 | 787 | 12 | 829 |
| ddvp, other related | 410 | 1,945 | 5,442 | 5,537 | 3,301 | 5,149 | 3,287 | 703 | 10 | 615 |
| diazinon | 104,443 | 71,179 | 48,594 | 35,069 | 32,862 | 27,004 | 24,353 | 24,579 | 17,936 | 18,186 |
| dicrotophos | None | None | None | None | 23 | 0 | None | None | None | None |
| dimethoate | 436,845 | 533,330 | 422,259 | 594,688 | 725,261 | 626,623 | 531,217 | 499,453 | 436,139 | 463,896 |
| dioxathion | 0 | None | None | 78 | None | None | None | 0 | None | None |
| dioxathion, other related | 0 | None | None | 78 | None | None | None | 0 | None | None |
| disulfoton | 6,167 | 1,621 | 2,595 | 1,042 | 1,157 | 205 | 16 | 0 | 0 | 0 |
| epn | 135 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 |
| eptc | 44,289 | 47,930 | 56,872 | 69,989 | 89,126 | 91,512 | 100,883 | 104,142 | 91,173 | 72,656 |


| Chemical | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ethephon | 455,338 | 603,012 | 533,890 | 475,399 | 414,279 | 363,766 | 452,937 | 552,727 | 495,541 | 501,233 |
| ethion | 184 | 81 | 332 | None | 0 | 306 | None | 30 | None | 94 |
| ethoprop | 1,378 | 1,892 | 541 | 676 | 844 | 591 | 575 | 582 | 1,712 | 1,682 |
| fenamiphos | 5,873 | 2,127 | 2,691 | 1,437 | 465 | 0 | 0 | 20 | 0 | None |
| fenoxycarb | 100 | 107 | 110 | 37 | 58 | 15 | 33 | 76 | 20 | 6 |
| fenthion | 0 | 0 | None | None | 0 | None | 60 | None | None | 1 |
| fonofos | 3 | None | None | None | None | None | None | None | None | None |
| formetanate hydrochloride | 30,898 | 22,038 | 21,821 | 27,894 | 28,234 | 31,515 | 41,115 | 36,188 | 38,494 | 40,356 |
| malathion | 434,717 | 281,044 | 271,654 | 289,865 | 285,266 | 266,825 | 218,571 | 204,397 | 216,999 | 200,129 |
| merphos | 0 | None | None | None | None | None | None | None | None | None |
| merphos, other related | 0 | None | None | None | None | None | None | None | None | None |
| methamidophos | 10,731 | 6,465 | 0 | 69 | None | None | None | 2 | 0 | None |
| methidathion | 49,968 | 34,918 | 31,741 | 9,046 | 3,564 | 453 | 198 | 27 | 138 | 6 |
| methiocarb | 2,335 | 2,057 | 2,802 | 3,378 | 2,409 | 2,444 | 1,771 | 1,934 | 1,380 | 1,119 |
| methomyl | 410,186 | 396,539 | 473,041 | 439,832 | 450,025 | 453,825 | 431,681 | 386,649 | 375,222 | 338,823 |
| methyl parathion | 13,046 | 13,343 | 15,551 | 12,486 | 0 | 298 | 60 | 0 | 27 | 5 |
| methyl parathion, other related | 13,029 | 13,327 | 15,337 | 12,440 | 0 | 36 | 18 | None | None | 1 |
| mevinphos | 11 | 108 | 3 | 0 | 51 | 51 | 23 | None | 136 | 123 |
| mevinphos, other related | 11 | 108 | 3 | None | 51 | 51 | 23 | None | 136 | 123 |
| mexacarbate | None | None | None | 0 | None | None | None | None | None | None |
| molinate | 6 | 0 | 0 | 3 | 0 | 1 | 1 | None | None | 0 |
| naled | 145,673 | 163,486 | 109,008 | 160,907 | 139,823 | 164,576 | 175,205 | 175,253 | 190,237 | 218,393 |
| oxamyl | 138,801 | 150,265 | 61,939 | 83,581 | 75,324 | 21,033 | 3,301 | 40,943 | 90,629 | 108,637 |
| oxydemeton-methyl | 86,131 | 27,447 | 18,204 | 12,163 | 9,096 | 7,355 | 7,883 | 3,555 | 3,111 | 17 |
| parathion | 56 | 68 | 15 | 0 | 1 | 207 | 82 | 60 | 0 | 299 |
| parathion, other related | 54 | 0 | 10 | None | None | 10 | 4 | None | None | None |
| phorate | 8,719 | 32,863 | 47,176 | 22,469 | 25,700 | 14,682 | 16,300 | 23,653 | 20,590 | 24,751 |
| phosacetin | None | None | None | 0 | 0 | 0 | None | 1 | 3 | 4 |
| phosmet | 40,276 | 33,692 | 18,923 | 23,726 | 21,122 | 10,336 | 11,297 | 7,751 | 8,407 | 9,483 |
| phosphamidon | 72 | None | None | None | None | None | 35 | None | None | 4 |
| phosphamidon, other related | 72 | None | None | None | None | None | 35 | None | None | 4 |
| pirimicarb | 0 | 0 | None | None | None | None | None | None | None | None |
| profenofos | 1,635 | None | 155 | None | None | None | None | None | None | None |
| propetamphos | 0 | 0 | 0 | 0 | 3,621 | 0 | 0 | 0 | 0 | 0 |
| propoxur | 0 | 3 | 0 | 4 | 179 | 39 | 19 | 0 | 25 | 0 |
| ronnel | None | 110 | None | 11 | 0 | 0 | 0 | 0 | None | 2 |


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| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathrm{s}, \mathrm{s}, \mathrm{s}$-tributyl phosphorotrithioate | 15,785 | 27,139 | 21,894 | 22,774 | 15,139 | 7,582 | 7,725 | 10,624 | 11,007 | 6,091 |
| sodium dimethyl dithio carbamate | 13 | 0 | 0 | 0 | 0 | 0 | 6 | 10 | 1 | 0 |
| sulfotep | None | 1 | None | None | None | None | None | None | None | None |
| temephos | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| tepp | 3 | None | None | None | None | None | None | None | None | None |
| tepp, other related | 3 | None | None | None | None | None | None | None | None | None |
| tetrachlorvinphos | 5 | 5 | 8 | 4 | 3 | 1,044 | 5 | 3 | 0 | 0 |
| thiobencarb | 75,172 | 71,824 | 79,689 | 84,726 | 107,636 | 148,349 | 197,836 | 178,307 | 172,814 | 190,275 |
| thiodicarb | 192 | 656 | 206 | 247 | None | None | None | 0 | None | None |
| triallate | 867 | 1,854 | 2,715 | 2,998 | 3,918 | 3,221 | 3,665 | 1,064 | 2,525 | 1,023 |
| trichlorfon | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 4,007,227 | 4,070,314 | 3,636,807 | 4,060,330 | 3,883,022 | 3,492,743 | 3,263,458 | 3,329,066 | 2,970,889 | 2,567,665 |

