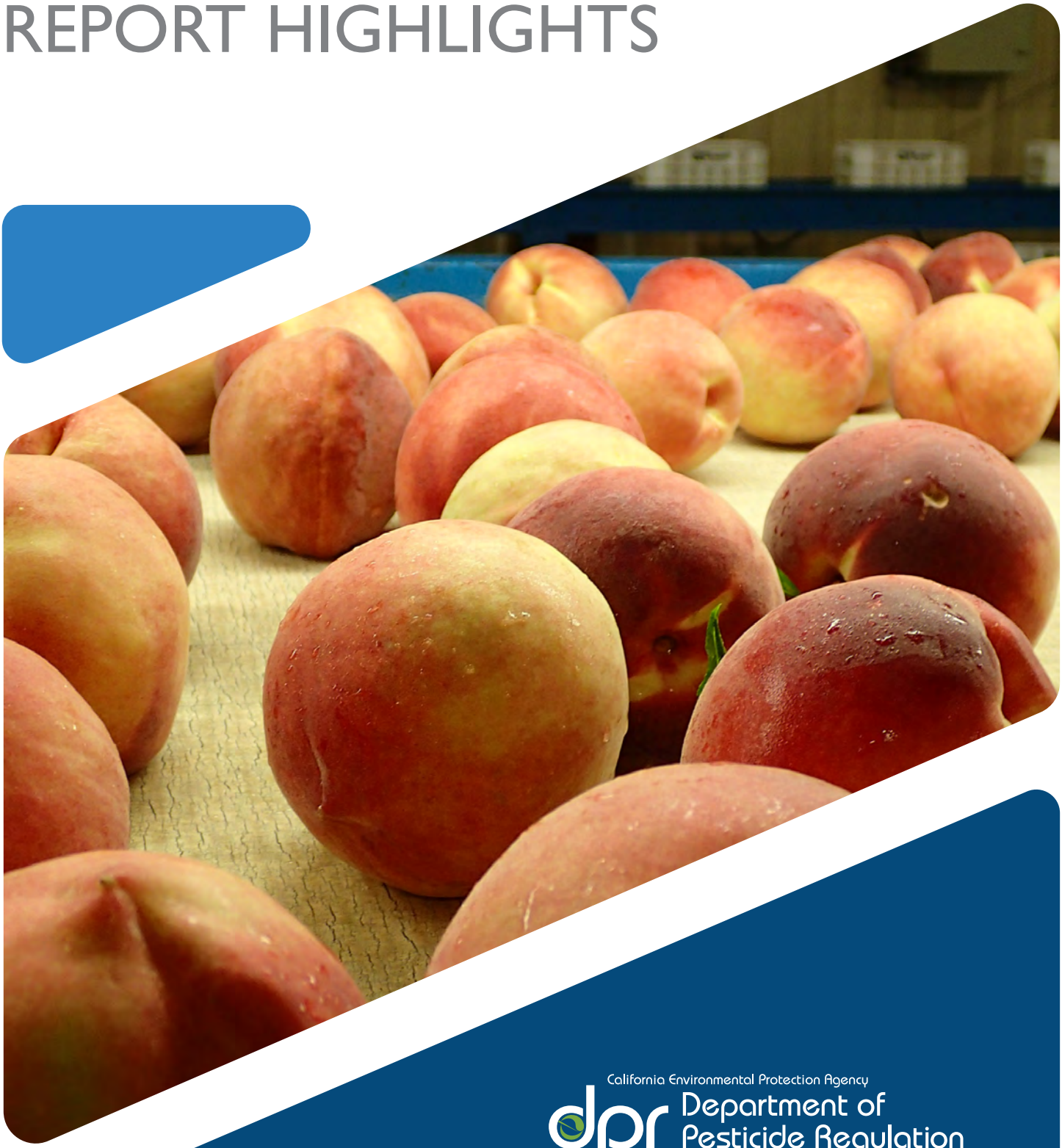
2020 PESTICIDE USE REPORT HIGHLIGHTS



California Environmental Protection Agency
Department of Pesticide Regulation

BACKGROUND

California began requiring limited pesticide use reporting in 1934. However, the detailed reporting that occurs today did not begin until the 1990s. The Food Safety Act of 1989 gave the California Department of Pesticide Regulation (DPR) the authority to require full reporting of agricultural pesticide use. Comprehensive use reporting including the pesticide applied, amount applied, area treated, application method, and other details began in 1990.

Over the years, this data has been used by a variety of individuals and groups, including government officials, legislators, scientists, growers, and public interest groups. On average, DPR collects around three million pesticide use records a year.

Currently the Pesticide Use Reporting (PUR) database contains over 95 million pesticide use records, going back to 1990.

PHOTO BY LESLIE TALPASANU

PESTICIDE USE OVERVIEW

Reported pesticide use for California in 2020 totaled 216 million pounds of applied active ingredients (AIs) and 106 million cumulative acres treated. Compared to 2019, pounds of AIs increased by 5.1 million (+2.4 percent) while the acres treated decreased by 2.8 million (-2.6 percent).

Following are the top five AIs in terms of pounds applied and acres treated. AIs are listed in order from highest amounts to lowest.

Highest Pounds Applied	Highest Cumulative Acres Treated
Sulfur	Sulfur
Petroleum and mineral oils	Glyphosate
Glyphosate	Petroleum and mineral oils
1,3-dichloropropene	Abamectin
Metam-potassium	Lambda-cyhalothrin

DEFINITIONS

Cumulative Acres Treated

The cumulative acres treated for a crop may be greater than the planted area of the crop since this measure accounts for a field being treated with the same active ingredient (AI) more than once in a year. For example, if a 20-acre field is treated three times in a calendar year with an AI, the cumulative acres treated would be reported as 60 acres while the area planted would be reported as 20 acres.

Pounds Applied

Total pounds of AI summed over a given time period, geographic area, crop, or other unit of interest.

COMMODITIES OF INTEREST

Every year, DPR performs a use trend analysis on commodities that were treated with over 4 million pounds of AIs or had more than 3 million cumulative acres treated. We refer to these as commodities of interest.

Collectively, the pesticides used on the 2020 commodities of interest represent 74 percent of the total amount used and 77 percent of the area treated in 2020.

More detailed use trends for commodities of interest are discussed in the full 2020 PUR Annual Report.

2020 commodities of interest:

- Alfalfa
- Almond
- Carrot
- Cotton
- Orange and Tangerine
- Peach and Nectarine
- Pistachio
- Rice
- Strawberry
- Table and Raisin Grapes
- Wine Grapes
- Walnut

PHOTO BY KIMBERLY STEINMANN

KEY PESTICIDE AND COMMODITY TRENDS

Pesticide use is affected by many factors, including pest populations/outbreaks, adoption of integrated pest management practices, crop value, weather, cost of pesticides and labor, pesticide resistance and effectiveness, and more.

Crops treated with the greatest total pounds of pesticides in 2020 were almond, wine grape, orange and tangerine, table and raisin grape, and strawberry. Crops with the greatest increase in the pounds applied from 2019 to 2020 include almond, strawberry, rice, carrot, and pistachio. Crops with the greatest decrease in the pounds applied include wine grape, cotton, table and raisin grape, and orange and tangerine.

Sulfur is a low-toxicity, natural fungicide and miticide and is used on each of the 2020 commodities of interest. It is used by both conventional and organic farmers to manage powdery mildew, mites, and other pests. Sulfur was the top AI in terms of pounds applied to and acres treated of the key commodities in 2020.

PHOTO BY KIMBERLY STEINMANN

PESTICIDE CATEGORIES OF INTEREST

Pesticide use is summarized for eight different categories based on a pesticide's potential to cause health or environmental impacts or type of pesticide. The following table lists these categories and shows their use trends in 2020 versus 2019. Lower-toxicity pesticides (biopesticides and oils) are listed at the top of the table above the thicker dividing line.

Category	Change in Pounds Applied	Change in Acres Treated	Percent Change	
			Pounds	Acres
Biopesticides	↓ -34,488 lbs.	↓ -560,344 acres	-0.4	-6
Oils	↑ 3.6 million lbs.	↑ 87,317 acres	9	2
Fumigants	↑ 3.1 million lbs.	↑ 12,857 acres	9	5
Cholinesterase Inhibitors	↓ -280,308 lbs.	↓ -186,189 acres	-9	-7
Reproductive Toxins	↑ 9,411 lbs.	↓ -233,247 acres	0.1	-6
Ground Water Contaminants	↓ -44,294 lbs.	↓ -116,574 acres	-13	-26
Carcinogens	↑ 2.5 million lbs.	↓ -236,798 acres	6	-3
Toxic Air Contaminants	↑ 2.7 million lbs.	↑ 45,258 acres	7	2

Pesticide use is dependent on many factors that can vary unpredictably from year to year. As a result, longer-term views can provide more insight into overall use trends. Since 2011, acres treated with pesticides in low-toxicity categories (biopesticides and oils) increased by 64 and 30 percent, respectively, while use of relatively higher risk categories decreased by 14 to 70 percent. Similarly, the pounds applied of biopesticides and oils increased by 94 and 39 percent, respectively, while the pounds applied of higher risk pesticide categories decreased by 5 to 77 percent.

REGULATORY ACTIONS

The table below summarizes notable regulatory actions taken by DPR in 2020.

Action	Overview
Expanded Carbaryl Restricted Material Designation	• A rule restricting general consumer use of pesticides containing carbaryl went into effect on August 1, 2020. Carbaryl is a cholinesterase inhibitor which can negatively impact human health when used incorrectly. By designating nearly all carbaryl products as "restricted materials," the regulation effectively limits the use of most carbaryl pesticides (except agricultural use baits) to professionals with proper training and licensing.
SGAR Reevaluation	• On September 29, 2020 Governor Newsom signed Assembly Bill (AB) 1788 (Chapter 250, Statutes of 2020) prohibiting the use of SGARs with limited exceptions until DPR completes its SGAR reevaluation, adopts necessary restrictions, and certifies that certain legal conditions have been met. • In 2019, DPR initiated a reevaluation of SGARs after investigating reported non-target wildlife exposures.
Chlorpyrifos Prohibition	• DPR reached an agreement with manufacturers to end virtually all chlorpyrifos sales by February 6, 2020, with virtually all use and possession prohibited after December 31, 2020. • DPR's action followed mounting evidence that chlorpyrifos is associated with serious health effects in children and other sensitive populations at lower levels of exposure than previously understood, including impaired brain and neurological development.
1,3-D Pilot Project	• In late 2020, DPR initiated a pilot program to evaluate the efficacy and practicality of new application methods of 1,3-dichloropropene (1,3-D) that provide a comparable degree of health protection as totally impermeable film (TIF) tarpaulins.
Neonicotinoid Reevaluation	• In August 2020, DPR held two workshops to gather feedback from the public and other stakeholders on draft proposed mitigation measures to protect pollinator health from neonicotinoid risks identified in DPR's 2018 risk determination.

PUR INFORMATION

Web Access

- Pesticide use annual reports issued by DPR can be found at: <https://www.cdpr.ca.gov/docs/pur/purmain.htm>
- The California Pesticide Information Portal can be used to obtain PUR data at: <http://calpip.cdpr.ca.gov/main.cfm>

File Access

- Raw data used in the annual reports, as well as older data (dating back to 1970) can be obtained here: <https://files.cdpr.ca.gov/pub/outgoing/pur_archives/>
- Data from each figure or table in the annual report can be found at: <https://files.cdpr.ca.gov/pub/outgoing/pur/data/>

Email

If you have questions, or would like to request copies of the annual report data, email DPR at: <PUR.Inquiry@cdpr.ca.gov>

Cover Photograph by John Gerlach

PHOTO BY KIMBERLY STEINMANN