



CALIFORNIA DEPARTMENT OF  
FOOD & AGRICULTURE

Karen Ross, Secretary

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DATE: August 1, 2024

SUBJECT: Number of farms using 1,3-dichloropropene-updated

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### **Background**

1,3-dichloropropene (1,3-D) is a pre-plant soil fumigant used to control soil-borne pests such as nematodes, insects, and disease-causing organisms in various California crops. Human health risks associated with 1,3-D emissions resulted in restrictions on its use within the state beginning in the mid-1990s. Currently, it is a restricted use material requiring a permit for application from the County agricultural commissioners (CACs).

To minimize human exposure to 1,3-D emissions from agricultural applications, the Department of Pesticide Regulation (DPR) implemented regulations to establish setbacks around occupied structures including minimum setback distances and durations, and maximum application rates and block sizes. These became effective on January 1, 2024. Based on a joint risk determination by DPR and OEHHA, DPR proposed new regulations that will change buffer zone distances and duration periods based on field fumigation method (FFM) groups and crops.

The Office of Pesticide Consultation and Analysis (OPCA) completed economic analyses showing the potential cost of compliance with the new proposed regulation to be \$84,136 - \$125,971 for the initial year and \$71,664 - \$103,866 annual after the first year. DPR asked OPCA to assist in estimating several additional parameters: total businesses impacted, small businesses impacted, and costs by annual vs perennial crop type.

### **Findings**

#### *Total Businesses Impacted*

While it is not possible for CDFA to directly estimate the total number of businesses impacted, we can provide the number of farms that used 1,3-D, which is a reasonable approximation of impacted businesses. This estimate does not include the companies that apply 1,3-D.



Between 703 and 1,021 separate farms used 1,3-D from 2019-2023 depending on the year (Table 1). 1,3-D is a pre-plant fumigant; farms planting perennials will only use it once in the lifetime of the orchard. This can lead to significant variability in both the number and type of farms that would be impacted each year.

Table 1: Number of farms using 1,3-D in California from 2019-2023

Year	Total farms using 1,3-D*	Farms growing perennials using 1,3-D	Farms growing annuals using 1,3-D	Total number of farms in CA
2019	996	442	582	69,900
2020	1,021	473	574	69,600
2021	971	440	552	69,000
2022	884	369	531	68,400
2023	703	238	480	-

\*The same farm could be growing both annuals and perennials in the same year and using 1,3-D on both, therefore, the total of farms growing annuals plus farms growing perennials would be greater than the total number of farms using 1,3-D. 2023 total farm data is not yet available.

The total number of California farms including all animal operations that would not have a need to apply fumigants was pulled directly from the 2019 to 2022 California Agricultural Statistics Review reports (<https://www.cdfa.ca.gov/Statistics/>). The 2023 report was not available at the time of this analysis. These reports compile data from several sources including statistical reports published by the USDA NASS, U.S. farm sector income and wealth statistics published by the USDA Economic Research Service, agricultural export data provided by the Department of Agricultural and Resource Economics at University of California, Davis, and organic agriculture statistics provided by the CDFA’s State Organic Program. The methodology used in these reports also differs from the Census of Agriculture by USDA-NASS methodology. Therefore, there may be discrepancies when comparing data in the 2022-2023 California Agricultural Statistics Review to data in the 2022 Census of Agriculture ([https://www.nass.usda.gov/Publications/AgCensus/2022/Full\\_Report/Volume\\_1,\\_Chapter\\_1\\_State\\_Level/California/cav1.pdf](https://www.nass.usda.gov/Publications/AgCensus/2022/Full_Report/Volume_1,_Chapter_1_State_Level/California/cav1.pdf)). The number of farms using 1,3-D was derived directly from the 2019 to 2023 pesticide use data provided by DPR.

### *Small Businesses Impacted*

DPR requested that a business be identified as a small business if it meets all the following criteria: (1) independently owned and operated, (2) not dominant in its field of operation, and (3) has fewer than 100 employees. Based on the 2022 Census of Agriculture, of 63,134 California farms, 44,941 were family/individually held, 7,757 were in partnership, and 6,528



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were family held corporations. Family and individually held operations were thus 82% of farms. It is likely that some of the 7,757 held in partnership would also qualify. Some of the individually and family held farms could possibly be disqualified based on employee numbers, but it is rare for farms to employ over 100 people full time. 2022 census data show that 17,759 farms employed at least one employee for 150 days or more. Of these 17,759 farms, 12,970 farms had 1 to 9 employees and 4,819 farms had 10 employees or more. It is also rare for a farm to be considered dominant in the field of operation. Overall, it is not possible to know the exact number of these farms that are considered small businesses by the definition requested. Using ownership data, however, we estimate that between 82% and 88% of California farms are small businesses.

#### *Cost of Compliance – Annuals vs. Perennials*

The total cost of compliance was estimated at \$45,029 to \$72,401 for annual crops and \$39,379 to \$60,230 for perennial crops, depending on the year (Table 2).

Table 2: Cost of Compliance with New Proposed Regulations Separated by Annuals and Perennials

Year	One-time Learning Cost		Annual Cost		Total Initial Cost	
	Perennials	Annuals	Perennials	Annuals	Perennials	Annuals
2019	\$12,444	\$10,234	\$41,699	\$62,167	\$54,143	\$72,401
2020	\$13,290	\$9,306	\$40,007	\$60,420	\$53,297	\$69,726
2021	\$12,472	\$8,542	\$47,758	\$54,907	\$60,230	\$63,449
2022	\$10,234	\$7,887	\$42,572	\$53,270	\$52,806	\$61,157
2023	\$6,631	\$6,113	\$32,748	\$38,916	\$39,379	\$45,029