



January 24, 2025

EWG Comments to California Department of Pesticide Regulation on the Proposed Regulation DPR 24-001 - Health Risk Mitigation for 1,3-Dichloropropene

The Environmental Working Group, or EWG, a nonprofit research and policy organization headquartered in Washington, DC with employees and research efforts in California and Minnesota, respectfully submits these comments to the California Department of Pesticide Regulation regarding the proposed regulation, DPR 24-001, for 1,3-dichloropropene, or 1,3-D.

The Environmental Working Group urges California DPR to create one, unifying regulation, based on the risk assessment performed by the Office of Environmental Health Hazard Assessment, or OEHHA, that protects all people, farmworkers, residents, and children from the carcinogenic effects of 1,3-D, and implement the appropriate restrictions to reduce exposures. As the existing and proposed regulations currently stand, neither DPR 22-005, which is supposed to protect residential bystanders from 1,3-D, or DPR 24-001, which is supposed to protect occupational bystanders from 1,3-D, offer comprehensive health risk mitigation for farmworkers and residents of agricultural communities in California.

Specifically, EWG recommends the agency do the following:

- 1. Utilize a consistent cancer slope factor, derived by OEHHA, across 1,3-D regulations**
- 2. Utilize additional safety measures to protect children's health**
- 3. Incorporate more information on workers shift start time to improve assumptions on occupational exposure**
- 4. Consider the cumulative nature and effect of 1,3-D exposures for people who are exposed to 1,3-D occupationally and residentially**

Background

1,3-dichloropropene is a soil fumigant used extensively throughout California to kill soil pests like nematodes and insects, before crops like strawberries, fruit and nut trees, and other crops are planted. 1,3-D is one of the most heavily used pesticides in California with 9.8 million pounds applied in 2022¹ and is one of the most frequently detected

¹ California Department of Pesticide Regulation. Pesticide Use Annual Report 2022 Data Summary. Pesticide Use Reporting Program. July 2024. Available at: https://www.cdpr.ca.gov/docs/pur/pur22rep/pur_2022_data_summary.pdf



pesticides in Californian air². Eighty percent of weekly air samples collected from four monitoring sites in California in 2023 had detectable levels of pesticides, and more than 20 percent contained detections of 1,3-D. 1,3-D is classified as a probable human carcinogen by the International Agency for Research on Cancer³, and known to the state of California to cause cancer under proposition 65⁴, and is banned in 40 countries⁵.

In December 2015, California DPR completed the “1,3-D Risk Characterization Document: Inhalational Exposure to Workers, Occupational and Residential Bystanders and the General Public”⁶ which evaluated the carcinogenic effects of 1,3-D to both occupational and residential bystanders and in 2016 published the “Risk Management Directive and Mitigation Guidance for Cancer Risk from 1,3-Dichloropropene (1,3-D)” which selected a regulatory target for 1,3-D of 0.56 ppb based on a 10 percent excess cancer risk and portal of entry carcinogenic effect of 1,3-D.⁷

In October 2021, the California Office of Environmental Health Hazard Assessment, or OEHHA, evaluated the carcinogenic effects of 1,3-D and derived a no significant cancer risk level, of 3.7 ug per day, based on a 5 percent excess cancer risk, systemic carcinogenic effect of 1,3-D and a cancer slope factor of 0.19 mg/kg/day. Based on an adult breathing rate of 0.28 m³/kg, this value translates into a health protective concentration of 0.04 ppb, 14 times lower than the regulatory target currently utilized by DPR.

Now, DPR has proposed two regulations to address cancer risks from people exposed to 1,3-D. One regulation, DPR 22-005, aims to protect residential bystanders, meaning people who may live or work near a treated field, but are not applicators or farmworkers,

² Delgado, R. Air Monitoring Network Results for 2023. Volume 13. October 2024. Air Program, Environmental Monitoring Branch, Department of Pesticide Regulation. Available at https://www.cdpr.ca.gov/docs/emon/airinit/air_monitoring_results/2024/2023_amn_results-2024.pdf

³ International Agency for Research on Cancer. IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans Volume 41. Some Halogenated Hydrocarbons and Pesticide Exposures. 1986. Available at: <https://publications.iarc.fr/59>

⁴ California Environmental Protection Agency. Office Of Environmental Health Hazard Assessment Safe Drinking Water and Toxic Enforcement Act Of 1986. Proposition 65 List of Carcinogens or Reproductive Toxicants. January 3, 2025. Available at <https://oehha.ca.gov/sites/default/files/media/downloads/proposition-65/p65chemicalslist.pdf>

⁵ Pesticide Action Network International. PAN International Consolidated List of Banned Pesticides. December 2024. Available at <https://pan-international.org/pan-international-consolidated-list-of-banned-pesticides/>

⁶ California Environmental Protection Agency. Human Health Assessment Branch Department of Pesticide Regulation. 1,3-Dichloropropene Risk Characterization Document Inhalation Exposure to Workers, Occupational and Residential Bystanders and the General Public. December 31, 2015. Available at https://www.cdpr.ca.gov/docs/risk/rcd/dichloro_123115.pdf

⁷ Department of Pesticide Regulation Memorandum. Risk Management Directive and Mitigation Guidance for Cancer Risk From 1,3-Dichloropropene (1,3-D). October 6, 2016. Available at https://www.cdpr.ca.gov/docs/whs/pdf/1,3-d_directive_mitigation.pdf



utilizes the less protective air concentration from the 2016 DPR assessment⁸. The other regulation, DPR 24-001, aims to protect occupational bystanders, meaning people who may be doing agriculturally related work near treated fields, and utilizes OEHHA's cancer risk approach⁹.

There is no reason why two different approaches should be used to assess cancer risk in these two populations, especially when in many cases the population overlaps, and currently the proposed regulations leave residential bystanders less protected than occupational bystanders. Additionally, the regulations are overly confusing and lack specificity in terms of how DPR will ensure the proposed restrictions do not lead to air concentrations that may harm human health.

Our specific comments below highlight why DPR must create one unified regulation for all Californians, utilizing OEHHA's cancer risk evaluation for 1,3-D, and a lifetime average air concentration limit of at least 0.04 ppb.

Specific Comments

Utilize a consistent cancer slope factor, derived by OEHHA, across 1,3-D regulations

The carcinogenic potency of 1,3-D does not change depending on who is exposed, even though exposure durations may be different. The agency should use the no significant risk level and cancer slope factor derived by OEHHA as the basis for limiting air concentrations for everyone.

This is especially important given the cumulative nature of 1,3-D exposures in agricultural communities where the same individual may face both occupational and residential bystander exposure, and that residential bystanders include children.

The major difference between the two regulations is that one was in consultation with OEHHA based on their recommendations while the other was not. The regulations that were not done in collaboration with OEHHA resulted in a higher target air concentration, even though the exposure duration for residential bystanders, representing a lifetime of exposure of 24 hours a day, 7 days a week, for 70 years, was considerably higher than the occupational duration, representing 8 hours a day, 5 days a week for 40 years. This

⁸ California Department of Pesticide Regulation. Initial Statement of Reasons and Public Report Pertaining to Health Risk Mitigation and Volatile Organic Compound Emission Reduction for 1,3-Dichloropropene (DPR 22-005). Available at https://www.cdpr.ca.gov/docs/legbills/rulepkgs/22-005/dpr_22-005_oal_isor_1,3-d.pdf

⁹ California Department of Pesticide Regulation. Initial Statement of Reasons And Public Report Pertaining to Health Risk Mitigation for 1,3-Dichloropropene (DPR 24-001). Available at https://www.cdpr.ca.gov/docs/legbills/rulepkgs/24-001/dpr_24-001_oal_isor.pdf



difference is largely driven by the different cancer slope factors utilized by DPR and OEHHA. Although both models are based on the same mouse cancer data from 1,3D exposure, DPR's assumption that 1,3D carcinogenicity is a portal of entry effect and not a systemic effect, as well as other assumptions, results in DPR's cancer slope factor being considerably lower resulting in less protective health standards. The data support 1,3-D carcinogenicity as a systemic effect and OEHHA's approach given that tumors were seen at multiple sites after oral and inhalation exposure to 1,3-D in animal studies and specifically "the lacrimal gland tumors seen in male mice exposed via inhalation"¹⁰. In fact, previous DPR assessments used a systemic effect approach and DPR has calculated both portal of entry and systemic slope factors for 1,3-D⁶.

Utilize additional safety measures to protect children's health

Children can have increased sensitivity to carcinogenic chemicals, and have higher breathing rates than adults, neither of which is currently considered in DPR's 1,3-D regulation for residential bystanders. DPR must use the no significant risk value derived by OEHHA as the basis to protect children's health. DPR should also consider utilization of additional safety factors, or age specific breathing rates for infants and children.

Although DPR states that the regulatory target of 0.56 ppb was "clearly based on analytic assumptions that apply only to non-occupational bystanders (as opposed to occupational bystanders), *including children* [added emphasis], specifically, 24-hour/7-day-a-week exposures in ambient air over a 70-year residency", this is not the case⁸ (page 4). In the 2016 risk mitigation document, which is the source of the 0.56 ppb target, in response to comment from OEHHA regarding the use of an additional uncertainty factor for age sensitivity, DPR states "DPR scientists *avored not including an additional uncertainty factor for age sensitivity* [added emphasis] because a direct portal of entry mechanism bypasses the metabolic differences that can result in increased sensitivity in early life."⁷ (page 3)

The first step to protecting children's health requires DPR use the no significant risk level derived by OEHHA, which translates to an air concentration of 0.04 ppb. Secondly, while EWG supports the utilization of the OEHHA derived cancer slope factor, there are several improvements that could be made to the assessment for occupational bystanders. Although Proposition 65 utilizes a negligible cancer risk of 1 in 100,000, a case can be made for a 1 in 1,000,000 cancer risk-based guidance, especially since 1,3-D is regulated

¹⁰ OEHHA (2021). Initial Statement of Reasons. Proposed amendment to Section 25705(b). Specific regulatory levels posing no significant risk. 1,3-Dichloropropene (oral and inhalation routes). Page 21



as a toxic air contaminant, and air pollutants are typically regulated at a 1 in 1,000,000 cancer risk as well as drinking water contaminants¹¹.

Incorporate more information on workers start time to improve assumptions on occupational exposure

For occupationally exposed individuals, DPR currently assumes exposure only occurs during the hours of 8 am to 4 pm yet farmworker surveys indicate varying shift times¹². Since OEHHA modeled 8-hour average exposure concentrations from 8 am to 4 pm, earlier start times could potentially result in higher levels of 1,3-D exposure.

As such, more consideration should be given to work start time. Although the regulation states “DPR will evaluate alternative work hours for certain townships and times of the year when 1,3-D applications occur, if warranted. To determine if alternative work periods for specific townships are warranted, DPR will rely on one or more sources of information to determine when field work is performed outside of the 8:00 am to 4:00 pm shift such as existing data, fieldworker surveys, statements of workers and worker representatives from the area, University of California Agriculture and Natural Resources (UCANR) reports, and experts’ opinions including CACs and UCANR advisors”⁹ (Page 12), this information is already available to DPR and should be considered and incorporated into the restrictions now, not evaluated down the line.

Consider the cumulative effect of 1,3-D exposures for people who are exposed to 1,3-D occupationally and residentially

California’s own air monitoring reports indicate that background average air levels of 1,3D in some agricultural communities are above DPRs current and proposed regulatory targets of 0.56 and 0.21 ppb and much higher than if the OEHHA no significant risk level were used to derive air concentrations limits of 0.04 ppb^{2,13}. The two regulations currently ignore that farmworkers are likely exposed to 1,3-D during, as well as outside of work hours.

In conclusion, the two regulations create an unjust and unequal patchwork of regulations that ultimately leave California’s most vulnerable communities at risk of serious health

¹¹ OEHHA. Guide To Public Health Goals (PHGs) For Chemicals in Drinking Water. 2015. Available at <https://oehha.ca.gov/sites/default/files/media/downloads/faqs/oehhaphgguide2015.pdf>

¹² UC Merced California Community and Labor Center. Farmworker Health in California 2022 Health In A Time Of Contagion, Drought, And Climate Change. February 2023. Available at https://clc.ucmerced.edu/sites/clc.ucmerced.edu/files/page/documents/fwhs_report_2.2.2383.pdf

¹³ California Department of Pesticide Regulation. Monitoring of 1,3-Dichloropropene in Fresno and Merced Counties: Results for 2023. Air Program, Environmental Monitoring Branch. July 2024. Available at https://www.cdpr.ca.gov/docs/emon/airinit/air_monitoring_reports/monitoring_1,3-d_fresno_merced_2023.pdf



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effects. The state must use one regulation, based on an air level of at most 0.04 parts per billion 1,3-D, to protect the health of Californians.

We appreciate the opportunity to comment.

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