

January 16, 2022

Julie Henderson  
Director, Dept of Pesticide Regulation  
1001 I Street, P.O. Box 4015  
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Via email

Dear Director Henderson:

Thank you for the opportunity to comment on the proposed regulation “Health Risk Mitigation and Volatile Organic Compound Emission Reduction for 1,3-Dichloropropene.” As scientists we focus our comments concern two issues: 1) the exposure threshold used to determine the cancer risk mitigation provided by the regulation and 2) adequacy of pilot studies for statewide regulation.

1. Exposure Threshold\*

Earlier this year your sister department, the Office of Environmental Health Hazard Assessment (OEHHA), calculated the daily exposure to 1,3-D required to maintain a cancer risk of 1:100,000. OEHHA followed standard guidelines from the U.S. Environmental Protection Agency and calculated an exposure threshold of 3.7 micrograms per day. In more familiar units, this is an average air concentration of 0.04 parts per billion.\*\* Your department also calculated an exposure threshold corresponding to 1:100,000 cancer risk, based on the same cancer study, with a result that was 14 times higher, 0.56 parts per billion or 51 micrograms per day.

The primary differences in the methods used by the two agencies are the following:

- a. OEHHA summed two tumor types in its analysis. DPR used only one tumor type.
- b. Based on the tumors in two different organs, OEHHA assumed that 1,3-D acted systemically. DPR used a different assumption that resulted in less potency for 1,3-D.

Both methods selected by OEHHA are standard procedures in cancer risk assessment.

When two sister departments differ in risk assessment calculations, the prudent approach is to use the more health protective exposure threshold. This is particularly true for 1,3-D because of stark environmental justice issues. In 2019, almost 70% of 1,3-D use occurred in zip codes where the Latinx population (by percent) is greater than the state average. Similarly, almost 90% of 1,3-D use occurred in zip codes where the median income is less than the state average. The department's air monitoring results (in six communities) also increase concerns because they are consistently above OEHHA's exposure threshold.

## 2. Pilot Emission Reduction Field Studies

Your department's exposure modeling is based on measurements of emissions from small, unreplicated applications of 1,3-D made with several different techniques designed to reduce emissions. There is not yet data to show whether the results of these small studies are valid in all of the soil types and weather conditions where 1,3-D applications are made. At this point the results should be considered suggestive and in need of additional verification.

We strongly recommend that the department amend the proposed regulation to make use of OEHHA's cancer risk threshold and keep continuous real time records of 1,3-D use while evaluating whether the pilot studies adequately predict real world emissions.

Sincerely,

*(affiliations for identification only)*

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\*Both DPR and OEHHA calculate exposure thresholds for 1,3-D. For OEHHA, the threshold is called a safe harbor level. For DPR, the threshold is called a regulatory target. Current science suggests that threshold approaches are not health protective and that “hazard and risk assessments should not assume existence of a “safe” or “no-risk” level of chemical exposure in the diverse general population.” See Woodruff, T.J., Rayasam, S.D.G., Axelrad, D.A. *et al.* A science-based agenda for health-protective chemical assessments and decisions: overview and consensus statement. *Environ Health* **21** (Suppl 1), 132 (2023). <https://doi.org/10.1186/s12940-022-00930-3>

\*\*To convert daily exposures in micrograms to air concentrations in parts per billion we used the following equation:

*Air concentration (ppb) = [[daily exposure (micrograms)]]/[breathing rate of 19.6 liters per day]] x .216 (conversion factor based on molecular weight)*