

**From:** [Caroline Cox](#)  
**To:** [CDPR\\_dpr22005](#)  
**Subject:** Comments on proposed regulation #22-005 for 1,3 dichloropropene soil fumigation  
**Date:** Wednesday, January 18, 2023 9:37:49 AM

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EXTERNAL:

January 17, 2023

Julie Henderson, Director  
California Department of Pesticide Regulation  
Via email: [dpr22005@cdpr.ca.gov](mailto:dpr22005@cdpr.ca.gov)

RE: Comments on proposed regulation #22-005 for 1,3 dichloropropene soil fumigation

Dear Director Henderson,

Underlying the approach towards 1,3-dichloropropene regulation that #22-005 takes is the assumption that 1,3-D is necessary for California agriculture to be successful. I ask you to reconsider this assumption.

The growth of organic agriculture shows that California farmers are successful and profitable without 1,3-D. Organic farmers across the state are using regenerative, sustainable and fumigant-free management techniques to grow their crops. Organic fruit, nut, grain, and vegetable acreage in California grew rapidly between 2013 and 2020 (from almost 250,000 acres<sup>[1]</sup> to over 400,000 acres<sup>[2]</sup>) The techniques used by these growers include mulching, use of appropriate varieties, crop rotations, solarization, and anaerobic soil disinfestation<sup>[3]</sup> as well as cover crops, resistant rootstocks, and botanical nematicides.<sup>[4]</sup>

Some details from crops that have historically had high use of 1,3-D:

1. Almonds: There are over 25,000 acres of organically grown almonds in California.<sup>[5]</sup> A recent (2021) publication in the journal *Frontiers in Sustainable Food Systems* did a detailed comparison of eight regenerative (certified organic) and eight conventional California almond farms. The researchers found that soil health, soil carbon, soil organic matter, biomass of soil microbes and bacteria, biomass of earthworms, water infiltration rate, and the diversity of soil invertebrates were all greater on the organic farms. Almond yields were similar in regenerative and conventional orchards and profits were twice as high in the regenerative systems compared to the conventional systems.<sup>[6]</sup>

2. Strawberries: There are over 5,000 acres of organically grown strawberries in California.<sup>[7]</sup> This is about 15% of the total strawberry acreage (33,000 acres).<sup>[8]</sup> University of California researchers have done extensive research regarding the efficacy and profitability of non-fumigant and/or organic strawberry production. These studies have shown that broccoli rotations are profitable and can suppress soilborne diseases.<sup>[9]</sup> Anaerobic soil disinfestation is another successful non-fumigant technique.<sup>[10][11]</sup> Costs and efficacy of anaerobic soil infestation can be improved by using wheat as a carbon sources and by combining with a cover crop.<sup>[12]</sup> In addition, strawberry growers now have a source of organic starts.<sup>[13]</sup> Moving towards a comprehensive Integrated Soil Health Management approach (similar to

integrated pest management) will make non-fumigant strawberry production in California even more successful than it currently is. <sup>[14]</sup>

3. Carrots: There are almost 20,000 acres of organically grown carrots in California. <sup>[15]</sup> While we did not find detailed comparisons with conventionally grown carrots, there is evidence that organically grown (fumigant-free) carrots are successful. California grows 85% of U.S. carrots and three companies Grimmway Farms, Wm. Bolthouse Farms Inc., and Kern Ridge Growers produce almost all of those carrots. All three of the companies successfully grow and market organic carrots. <sup>[16]</sup> According to Bob Borda, Grimmway's vice president of marketing, "while the sales of conventional carrots are basically static, organic carrot sales are on the rise and more than make up for any losses on the conventional side." <sup>[17]</sup> The U.S. Dept of Agriculture says about 14% of the U.S. carrot crop is organically grown, "making carrots one of the highest ranked crops in terms of the total percentage produced organically." <sup>[18]</sup> Consistent with these evaluations of California and U.S. carrots, a European experiment comparing organic and conventional carrots found organic yields were higher and the organic carrots were higher in Vitamin C content. <sup>[19]</sup>

Thank you for the opportunity to provide comments.

Sincerely,

Caroline Cox

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<sup>[1]</sup> [https://aic.ucdavis.edu/wp-content/uploads/2020/10/CA\\_Organic\\_Report\\_10.21\\_corrected.pdf](https://aic.ucdavis.edu/wp-content/uploads/2020/10/CA_Organic_Report_10.21_corrected.pdf)

<sup>[2]</sup> [https://www.cdfa.ca.gov/is/organicprogram/pdfs/2020\\_2021\\_California\\_Agricultural\\_Organic\\_Report.pdf](https://www.cdfa.ca.gov/is/organicprogram/pdfs/2020_2021_California_Agricultural_Organic_Report.pdf)

<sup>[3]</sup> <https://attra.ncat.org/publication/strawberries-organic-production/>

<sup>[4]</sup> <https://attra.ncat.org/publication/nematodes-alternative-controls/>

<sup>[5]</sup> [https://www.cdfa.ca.gov/is/organicprogram/pdfs/2020\\_2021\\_California\\_Agricultural\\_Organic\\_Report.pdf](https://www.cdfa.ca.gov/is/organicprogram/pdfs/2020_2021_California_Agricultural_Organic_Report.pdf)

<sup>[6]</sup> <https://www.frontiersin.org/articles/10.3389/fsufs.2021.664359/full>

<sup>[7]</sup> [https://www.cdfa.ca.gov/is/organicprogram/pdfs/2020\\_2021\\_California\\_Agricultural\\_Organic\\_Report.pdf](https://www.cdfa.ca.gov/is/organicprogram/pdfs/2020_2021_California_Agricultural_Organic_Report.pdf)

<sup>[8]</sup> [https://www.cdfa.ca.gov/Statistics/PDFs/2021\\_Ag\\_Stats\\_Review.pdf](https://www.cdfa.ca.gov/Statistics/PDFs/2021_Ag_Stats_Review.pdf)

<sup>[9]</sup> <https://escholarship.org/content/qt0bc45901/qt0bc45901.pdf?t=po0n9f>

- [10] <https://www.mdpi.com/2076-2607/9/8/1638>
- [11] <https://www.sciencedirect.com/science/article/abs/pii/S0261219421001290>
- [12] <https://www.avantipublishers.com/index.php/gjaird/article/view/1136/683>
- [13] <https://innovativeorganicnursery.com/>
- [14] <https://www.frontiersin.org/articles/10.3389/fsufs.2022.839648/full>
- [15] [https://www.cdfa.ca.gov/is/organicprogram/pdfs/2020\\_2021\\_California\\_Agricultural\\_Organic\\_Report.pdf](https://www.cdfa.ca.gov/is/organicprogram/pdfs/2020_2021_California_Agricultural_Organic_Report.pdf)
- [16] <https://www.cabidigitallibrary.org/doi/pdf/10.1079/9781789247541.0000#page=319>
- [17] <https://theproducenews.com/organics-are-fueling-growth-grimmway-farms>
- [18] <https://www.usda.gov/media/blog/2016/02/09/usda-scientists-take-organic-approach-improving-carrots>
- [19] <https://www.mdpi.com/2073-4395/10/9/1420>