

• 1,3-D COMMENTS @ 1-18-23 HEARINGS BY WOODY REINER (pp. 1-5)

I was a farmworker living in rural WA state for 18 years and also a special education teacher in the Pajaro Valley USD for eighteen years. Thank you for this opportunity to share insights on living with 1,3-D in our agricultural communities. I want to emphasize four main points:

1) 1,3-D is a carcinogen and a toxic air contaminant. Repeated exposures over time increase risk of cancer and other illnesses. 210,000 pounds were applied in 2018, mostly in the Pajaro Valley where Watsonville is located. Our most vulnerable people have the highest risk. From 2000-2018, almost 4 million pounds of 1,3-D were applied in Santa Cruz County, mostly in Pajaro Valley surrounding Watsonville.

2) 1,3-D may interact with other chemicals, specifically chloropicrin, with unintended consequences to human health. It is often applied in the hottest months of summer/fall, when wildfire smoke is present. In the coastal valleys of our state, few residents have air conditioning, so they have to choose between opening windows with possible exposures to fumigants at night, or dealing with high indoor temperatures. Farmworkers, who statistically are more susceptible to respiratory illnesses than the baseline population, face wildfire smoke and toxic air contaminants like chloropicrin and 1,3-D. Chloropicrin is also a toxic air contaminant and produces nitrous oxide, a GHG 300x as powerful as CO₂, which lasts in the atmosphere 100 years. It is a carcinogen yet to receive Prop 65 listing.

3) 1,3-D kills soil organisms which are essential to carbon sequestration, building soil structure, and increasing soil's ability to directly feed plants without the use of chemical fertilizers. Transitioning to organic, healthy-soils agriculture is a logical move. Driscoll's has developed soil-pathogen resistant strawberries and needs to move them out on the market in order to assist in the transition to healthy soils.

4) In her book "Wilted: Pathogens, Chemicals & the Fragile Future of the Strawberry Industry," Dr. Julie Guthman predicts the dilemma a fumigants vs. public health. The strawberry industry chose decades ago to depend on fumigants to kill soil pathogens so that researchers could breed plants for other qualities: size,

color, texture, flavor, etc. Fumigation also made possible the berry monoculture that now exists in the Pajaro Valley, which is contrary to the age-old plant husbandry principles of crop rotation and diversity. Now that the public has scientific research to show probable harm, the industry is concerned that public pressure will affect the use of 1,3-D. That is why we are attending this hearing at Cal EPA.

In late May, Santa Cruz County Agricultural Commissioner Juan Hidalgo held a community meeting at the Pajaro Village Club House in Watsonville to announce a new statewide pilot notification program to provide select residents with information about some of the poisonous chemicals that are being applied to fields around them. Four California counties are part of the pilot program, Ventura, Riverside, Stanislaus and Santa Cruz. According to the California Department of Pesticide Regulation, when the statewide system is instituted, it "will advance environmental justice and further protect public health by providing transparent and equitable access to information in advance of pesticide application occurring near where people live, work or play."

In Santa Cruz County, the pilot program goes from August to December. Because of their toxicity and restricted use, according to Hidalgo, the chemicals that will be reported in the pilot are three fumigants: 1,3-Dichloropropene, chloropicrin and metam potassium. These fumigants are injected into the ground under plastic tarps in the late summer or early fall to sterilize the soil for next year's crop. The target population for the Santa Cruz County pilot program is about 1,000 households, mostly in senior housing in southeast Watsonville, alongside agricultural fields

Chloropicrin is a powerful tear gas commonly used in building fumigation. 1,3-dichloropropene, also known by its Dow Chemical brand name, Telone, is a carcinogen currently banned in 34 countries. It was also banned in California from 1991-1995. Dow used its own in-house "science" to convince the EPA to re-register 1,3-D for use in 1995 to replace methyl bromide, which was being phased out due to its detrimental effects on the ozone layer.

These fumigants are listed as Toxic Air Contaminants in California. They're injected under tarps in order to kill soil pathogens. After 9-10 days, the tarps are "cut" and residual gases float in the airstream. If you are vulnerable, the danger of exposure is not just during the injection but also 9 to 10 days after when the tarps are removed and poisonous gasses float into the air. The cutting of tarps, freeing

residual gas, is the most critical time for potential exposures, yet no warning is given to residents.

A society's compassion is measured by how it treats its most vulnerable members. Farmworkers, children, seniors, the homeless and medically fragile, all deserve better than chronic, cumulative exposures to the toxic air contaminant and carcinogen 1,3-D. It is common knowledge that Latino communities are disproportionately impacted by pesticide drift in California. Watsonville and the Pajaro Valley are no exceptions.

How do we know this? An air monitor had been set up at Ohlone Elementary School, less than 4 miles south of Watsonville that has been measuring 1,3-dichloropropene in the air since 2012. In July 2022, OEHHA, a branch of the Department of Pesticide Regulation, presented its study of 1,3-dichloropropene. The concentration in the air at Ohlone Elementary has exceeded the designated safe level of 0.04 parts per billion every year as shown in the chart below.

Site	Annual air concentration of 1,3-dichloropropene in parts per billion, reported by DPR										
Ohlone Elementary	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Average
	0.16	0.13	0.09	0.12	0.07	0.09	0.05	0.06	0.12	0.059	0.096

The ten-year average of 0.096 ppb, the final number in the chart, is equal to 2.4 times more than the Office of Environmental Health Hazard Assessment's safe harbor level for 1,3-dichloropropene. Farmworkers in our communities, as well as children, seniors, the medically fragile, and in fact all residents, have an increased risk of developing cancer without a more restrictive policy **Meanwhile, DPR is ignoring OEHHA's safe harbor and supporting Dow Chemical's recommended 1,3-D exposure level of 0.56 ppbillion, 14 x OEHHA's safe harbor level. This is unacceptable.** I demand that DPR limit 1,3-D emissions to .04 ppbillion.

In addition, similar results have been obtained for the five other monitoring stations in CA.

According to Tracking California--Pesticide Mapping Tool data, in the square mile (section) where 1,000 seniors live in NE Watsonville, from 2008-2018 83,000 pounds of 1,3-D were applied, some of it within 100 feet of seniors' back fences.

JANE SELLEN



This square mile also borders Ann Soldo Elementary School and the mixed apartment/townhouse Vista Montana neighborhood, which is largely Latino.

The square mile just west of Ohlone Elementary in N. Monterey County, about 4 miles from us on Sunny Mesa, had 126,000 pounds of 1,3-D applied from 2000-2018. This is notable because a fumigant monitoring station was established at Ohlone decades ago due to a successful lawsuit alleging environmental injustice in disproportionate exposures of Latino children to pesticides. Over the years, teachers at Ohlone have noted incidences of childhood cancer at the school.

The square mile adjacent Hall District Elementary near Las Lomas in N. Monterey County had 130,000 pounds of 1,3-D applied from 2002-2018. The square mile adjacent to Renaissance High on San Andreas Rd. in Santa Cruz County had 149,000# of 1,3-D applied from 2000-2018.

The square mile on the N. edge of Watsonville, which includes 100-acre blackberries at Nugent Ranch (leased by Driscoll CEO Miles Reiter), 33 acres of which are now organic, had 84,500 pounds of 1,3-D applied from 1997-2018. Nugent Ranch is adjacent to Watsonville's Wagner Avenue and Martinelli neighborhoods; it is directly across an access road from MacQuiddy Elementary's playground.

Simply being notified that these chemicals are being applied is not enough. Santa Cruz County leads the state in the highest proportion of fumigants to total pesticides used (67% in 2018), with most of that here in the Pajaro Valley. And these are only some of the toxic chemicals used in conventional agriculture, most of which do not require notification.

Much of the research devoted to 1,3-D considers it in isolation, but in our area it is almost always applied in conjunction with chloropicrin. Little research is available on interactions between the two fumigants. In its conclusion, the UCLA research paper "Exposure & Interaction: the potential health impacts of using multiple pesticides" (1-1-15), a blue ribbon panel of scientists suggests that fumigants may interact in synergistic ways to create greater toxicity, based on field research conducted in Oxnard in the summer of 2013. Its conclusion is quoted below...

"This report attempts to demonstrate three points:

1) It is possible these pesticides interact [chloropicrin, 1,3-D, & metam sodium] to increase human health hazard.

- 2) People in California are exposed to these pesticides together.
- 3) DPR is required to assess this risk and protect public health but isn't doing so."

"The study focused on interactive effect that would affect cancer potency. Interactive effects from these and other pesticides may also increase the risk of other health problems, including those related to developmental, reproductive, and neurotoxicity, but such interactive effects were not investigated in this report. Additionally, this study focused on three commonly used fumigant pesticides, but interactive effects could occur among other pesticides."

"Assessing the interactive effects of pesticides will be complex. As our society seeks to balance the human and environmental harm caused by pesticides with the economic benefits they provide, both the interactive effects and the cost of assessing them must be considered." [Exposure & Interaction, p. 32]

Another concern with 1,3-D is its role in preventing the carbon sequestration which takes place in healthy living soils and counters climate change. Chloropicrin and 1,3-D kill soil microbes and nematodes —so that plant pathogens cannot attack berries. Over time, continuously fumigated soils become "denatured," depleted, and devoid of needed organic matter. Earthworms and other soil organisms disappear. Fumigants encourage monoculture instead of crop rotation.

That means ~~f~~These soils hold little moisture, are prone to wind and water erosion, and are vulnerable to climate change. A recent U.N. study states that in 60 years, our planet will lose most of its topsoil, unless we move away from this type of conventional chemical farming.

Commented [1]: do you have a link?

Organic farming offers an alternative. Healthy, living organic soil teems with billions of beneficial microbes, channeling soil nutrients to plants in exchange for sugars the plants produce. Simply put, microbes in healthy, living soil take carbon from the air via plants and store it underground, a natural, low-tech, low-cost solution to climate change. This carbon adds organic matter to soil, increasing resilience to droughts and floods by improving soil structure.

-WOODY REHANEK
 451 VIVIANE DRIVE
 WATROOVILLE, CA 95076
 woodyrehaneke@aol.com
 831.359.1771