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EWG Air Monitoring Finds Toxic Pesticide Drifting Into Mobile Home Park

Air monitoring by Environmental Working Group and residents of a Central California mobile home park after methyl bromide fumigation of an adjacent strawberry field found levels of the pesticide that may have exceeded the state's health standard. Methyl bromide was detected in the park at a distance eleven times greater than the state-mandated buffer zone intended to protect residents from exposure.

While some imprecision in the monitoring cautions against firm conclusions, these results fit a consistent pattern of findings from other EWG monitoring projects, indicating that the state's methyl bromide regulations are inadequate to protect public health. These latest findings support EWG's position that methyl bromide's extreme toxicity and volatility make it unsafe for use under any conditions.

Background and methodology

For several years, some residents of the Duna Vista, a senior citizens' mobile home park near Oceano, Calif. (San Luis Obispo County), have complained of nausea or increased respiratory ailments during methyl bromide fumigations of nearby strawberry fields. During the Oct. 16-18, 1997, fumigation of a 9-acre field, located across Arroyo Grande Creek from the park, an EWG monitoring device was placed on the property of one of the residents, approximately 350 feet from the edge of the field.

The monitor was a 1.5-liter stainless steel, silicon-lined Summa vacuum canister, calibrated to sample the air continuously for 12 hours. Fumigation of the first 2 acres of the field began at approximately 9 a.m. on Oct. 16. The applicator reported using 250 pounds per acre of methyl bromide. The field was covered with a high-barrier plastic tarp, which is supposed to prevent the pesticide from drifting. At 6:45 p.m., the monitor was activated, and remained on until 6:45 a.m. on Oct. 17. At that hour applicators began fumigation of the second section of the field. The resident operating the monitor mistakenly reopened the vacuum valve at 6:40 p.m. that evening, and it remained open until 1 p.m. Oct. 20. The canister was then shipped to an independent laboratory, which analyzed the contents twice to ensure accuracy.

Results

Laboratory analysis revealed a 12-hour average of 230 parts per billion (ppb) of methyl bromide in the air approximately 350 feet from the fumigated field. The health standard established by the California Department of Pesticide Regulation (DPR) is 210 ppb, averaged over 24 hours. The state-mandated buffer zone for this application was 30 feet.

Discussion

While the error in operating the monitor cautions against firm conclusions about the findings, it does not invalidate them: In fact, the result would be to make the levels appear lower than they actually were. If the monitor is left on longer than 12 hours, it will sample only until the canister fills with air. A pressure gauge on the canister allows the operator to see what portion of the vacuum pressure remains at the end of the sampling session. This reading is recorded by the operator in order to allow the laboratory to tell how much air was actually drawn into the canister.

At the end of the first 12 hours of sampling, the gauge indicated very little negative pressure in the canister, and the remainder would have been quickly depleted when the valve was reopened. According to the laboratory, the results would still be valid for a 12-hour sample. If anything, allowing the valve to remain open after the canister was full would have allowed some air to escape, lowering the amount of methyl bromide captured and making the final results conservative. It is safe to say that at a minimum there was 230 ppb of methyl bromide in the air over the first 12 hours.

It is important to note that several other recommended exposure levels have been established that are much more protective than DPR's standard of 210 ppb over 24 hours (Figure 1):

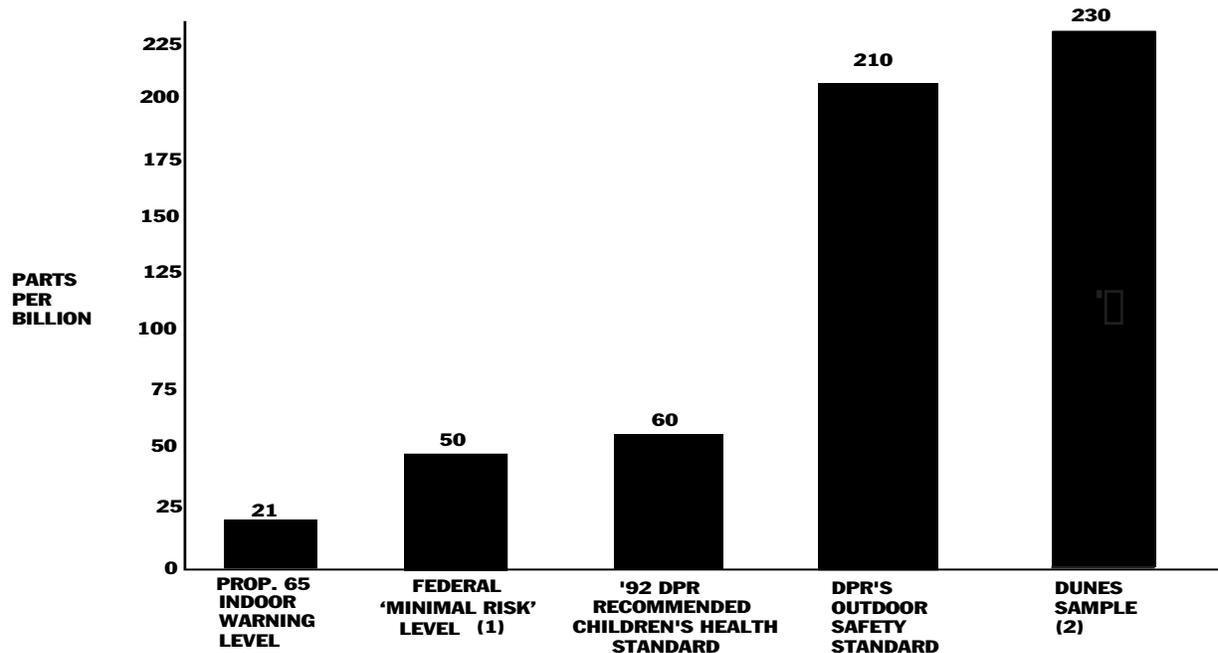


Figure 1. Methyl bromide levels found at the Dunes compared to recommended 24-hour exposure levels. (1) 1-14 days. (2) 12-hour sample.

- **California's double standard.** When methyl bromide is used in indoor fumigations, the warning level under Proposition 65, California's main toxics law, is 21 ppb — 10 times more protective than the standard for outdoor use. Also, in 1992, DPR's own scientists recommended a 24-hour exposure standard for children of 60 ppb. This recommendation was not adopted by the agency.

- **Federal Minimal Risk Level.** The federal Agency for Toxic Substances and Disease Registry (ATSDR) has established a Minimal Risk Level (MRL) for methyl bromide of 50 ppb for exposure periods of 1-14 days. MRLs are used by regulators to determine whether a hazardous waste site may pose a risk to public health. The agency says the MRL is "set below levels that might cause adverse health effects in the people most sensitive." If levels exceeding the MRL are detected coming from a Superfund site, regulators may order a study of the risk to the public, including air monitoring and health surveys. While ATSDR says that "exposure to a level above the MRL does not mean adverse effects will occur," the agency also endorses a conservative approach to setting exposure levels, "consistent with the public health principle of prevention."

Conclusion

For at least 12 hours, residents of the Duna Vista were exposed to levels of methyl bromide exceeding the state's Prop. 65 warning level, the federal Minimal Risk Level, and in all likelihood, the state's outdoor safety standard. These results support previous findings of methyl bromide's extreme volatility, and underscore the need for public health standards consistent with the principle of prevention.