

**Testimony of Gina Solomon, M.D., M.P.H. at the joint Assembly Committee on Environmental Safety & Toxic Materials and Assembly Committee on Health Oversight Hearing on the Public Health and Environmental Risk of Methyl Iodide in California**

**February 22, 2011**

Good afternoon Chairman Monning, Chairman Wiecekowski and members of the Committees. Thank you for inviting me to testify. My name is Gina Solomon and I am an Associate Clinical Professor of Medicine at UCSF where I am also the Director of the Occupational and Environmental Medicine Residency Program. I am also a Senior Scientist at NRDC (the Natural Resources Defense Council). At UCSF I teach medical students, residents, and fellows about toxicology, occupational and environmental health; I also see patients who have been exposed to various chemical hazards at work or in other settings, including workers who have become ill from exposure to pesticides. My comments on methyl iodide are based on my own scientific assessment, and my comments about the alternatives to methyl iodide and methyl bromide reflect NRDC's research on this topic.

In brief, methyl bromide is a chemical of very serious concern because of its known destruction of the stratospheric ozone layer. It is a public health and environmental imperative to reduce and phase out the use of this fumigant, and doing so will prevent thousands of skin cancer cases and ophthalmologic cataracts in the U.S. alone every year. However, as you heard last week from my other University of California Colleagues Drs. Tracey Woodruff and Dr. Michael Wilson, the principles of green chemistry that we have embraced in California require that we assess alternatives to dangerous chemicals, and by doing a proper alternatives assessment, we can avoid the problem of regrettable substitutions – where hasty adoption of an easy alternative opens up an entirely new set of serious problems. I'm sorry to say that methyl iodide would be a highly regrettable substitution.

Use of methyl iodide instead of methyl bromide creates a Sophie's choice: Trading off protection of the ozone layer against serious risk to groundwater resources; trading off a reduction in skin cancers for an increase in thyroid and other cancers. Methyl iodide also exhibits a remarkable propensity to target the brain and nervous system, and damage the developing fetus; it also has a dramatic affinity for damaging DNA in living cells, all of which makes physicians and toxicologists very worried about the workers who may be handling this chemical, as well as the communities living near where it is applied. In short, if we allow methyl iodide to be used in California, we will all regret it.

As a scientist, I was very impressed with California's process for evaluating methyl iodide. The DPR staff scientists did a very good job evaluating the toxicity of this chemical, the stellar Scientific Review Committee made excellent recommendations for improvements, many of which were ultimately incorporated into DPR's final risk assessment. But then something rather strange occurred. In the waning days of the previous administration, a decision to register the chemical was rushed through -- a decision which flies in the face of all of the excellent scientific work that was done over the prior two years, and that fails to comport in any way, shape, or form with the scientific facts that are on the table.

In fact, the level that DPR now allows for exposures to the general public corresponds to 100-times the level that DPR itself determined was the maximum safe exposure for risk of fetal death. The cancer risk level for workers is 8-fold higher than DPR’s maximum acceptable cancer risk, and the risk of neurological effects at the levels that DPR decided to allow ranges from 5-fold higher than the safe upper limit calculated by DPR itself (for infants and children), to 3-fold higher for applicators. I have a table in my testimony that provides all of these number comparisons. Dr. Ron Melnick a member of the Committee who was a toxicologist with the National Institutes of Health calculated that exposure to DPR’s allowable level of methyl iodide (32 ppb) for just one month per year would still far exceed California’s no significant risk level for cancer.

*Comparison of Allowable Exposure Levels to Methyl Iodide: DPR Risk Assessment vs. Final DPR Decision*

<i>DPR-determined maximum ‘safe level’</i>	<i>Level DPR decided to allow</i>
	96 ppb (applicators)
32 ppb (neurotoxicity to workers)	32 ppb (workers)
12 ppb (adults, general public)	32 ppb (adults, general public)
7 ppb (neurotox, children)	32 ppb (children)
6 ppb (neurotox, infants)	32 ppb (infants)
0.8 ppb (fetal death, workers)	32 ppb (workers)
0.3 ppb (fetal death, genl public)	32 ppb (genl public)
1.7-4.0 ppb (cancer, workers)	32 ppb (workers)
0.04-1.0 ppb (cancer, genl public)	32 ppb (genl public)

In my view, these numbers mean that people will get sick and injured, possibly in large numbers, if this chemical comes into widespread use in California agriculture. It’s hard to stand by quietly and watch this happen.

I’m a health professional, so my focus sometimes stops there. However, my colleagues at NRDC are working hard – in partnership with major agricultural organizations in California – to move toward solutions that protect workers, communities, and the environment while also sustaining the industry. There is no immediate ‘silver bullet’ that will allow elimination of methyl bromide tomorrow. However, there are some very promising approaches.

1. DPR has overlooked a crucial near-term affordable solution for strawberry growers. Studies show that Virtually Impermeable Films (VIFs) can dramatically reduce methyl bromide use and emissions. My colleagues and I have reviewed the data and we believe that this technology – if used appropriately and with appropriate worker safeguards – could reduce methyl bromide use in California by an estimated 340 tons per year (a 25 percent reduction from current use) by allowing reductions in the application rate, without the need for other fumigants such as methyl iodide. It is time for DPR to take a careful look at the potential for VIFs to reduce the use of methyl bromide in the near-term.

2. Although fifteen years of dedicated research funding has been spent seeking alternatives to methyl bromide, the vast majority of work has focused on development of other fumigants – including methyl iodide. However, there are some promising non-chemical methods that have been developed. Now is a critical time for scaling-up the most promising non-chemical alternatives, and for moving quickly to large-scale on-farm trials in California. CDFA has funding through USDA for such research, and DPR also has the capability of funding some of this research from existing monies. This needs to be a priority over the next 2-3 years. Creating a crop insurance program for growers who farm without fumigants would also provide protection against undue risk from trying new approaches.
  
3. California organic strawberries are much-loved by consumers and highly profitable for growers. The market in this area could expand significantly. Disease-resistant strawberry cultivars have been developed by the large organic growers, and the potential for emerging biopesticides also offers huge opportunities. There are serious economic barriers during the transition period to organic, so creative solutions to incentivizing this shift and supporting growers who wish to transition, will be essential. Some of this support is available through CDFA and some from private sources. Of course going organic is not necessary to stop using fumigants - by combining alternatives, growers can maintain yields while protecting the environment and public health.

Ultimately nobody wants to save the ozone layer by contaminating California groundwater, or to replace one unsafe chemical with a worse one, or to ruin the California strawberry industry. This is a time to apply creative solutions that will protect both public health and agriculture. I am convinced that such solutions are attainable.