

Methyl Iodide: The Facts

March 2011

Californians want science, not corporate pressure, to guide government decisions

California Governor Jerry Brown must revoke the approval of the cancer-causing strawberry pesticide, methyl iodide.

The Governor, state legislators and relevant state agencies must instead channel existing federal dollars to support healthy and safe alternatives that leverage California's ability to innovate, and provide impetus for growth of the green jobs sector.

The science is clear: methyl iodide is simply too toxic to use in California's fields

Methyl iodide is *known* to cause cancer and late-term miscarriages, and is a likely neurotoxin and water contaminant.¹ It is so reliably carcinogenic that scientists use it in the lab to *create* cancer cells. Even when used in closed environments like laboratories, scientists take serious precautions—using a ventilation hood and protective gear when handling small amounts. Methyl iodide is on California's Proposition 65 list of chemicals known to cause cancer.

In December 2010, under pressure from Arysta LifeScience Corporation, the California Department of Pesticide Regulation (DPR) approved methyl iodide for use in agriculture, where it will be applied as a gas at rates of up to 100 lbs per acre to fields from which it can drift onto nearby homes, schools and businesses. This is approximately 120 times the rate which scientists claim is safe for one year, which means that being exposed to the approved levels for just four days a year would be unsafe. In addition to the threat posed to farmworkers and communities living next to strawberry fields, methyl iodide will likely contaminate groundwater.

Arysta LifeScience is using the global phaseout of the ozone depleting methyl bromide as a political opportunity to push methyl iodide as a drop-in replacement. An investment in other alternatives is a safer, more prudent choice for California.

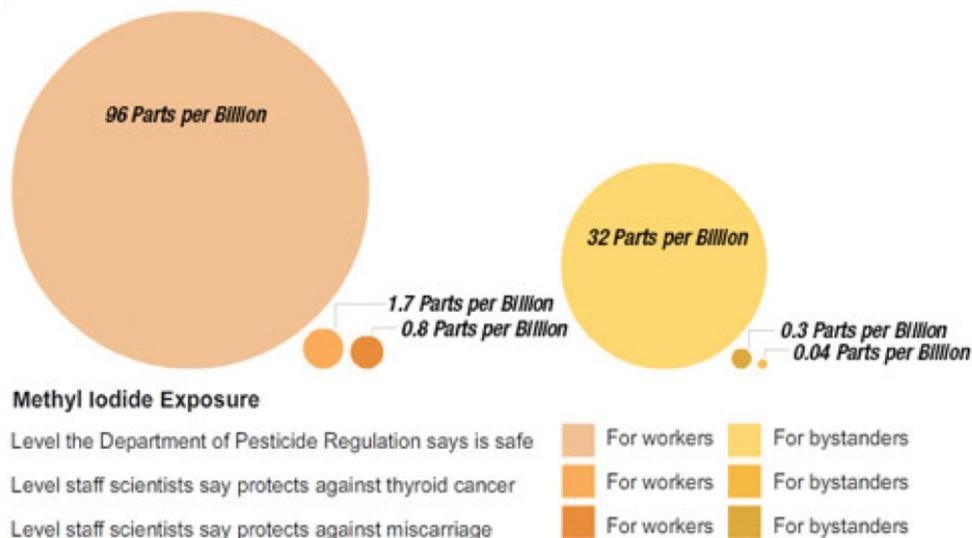
Scientists reject methyl iodide

Even though California's rules for methyl iodide application are stricter than federal requirements, they are still abysmally weak, and by the estimation of their own staff scientists, insufficient to protect public health.

In fact, scientists say that *no* regulations could be stringent enough to render this chemical safe for use. The independent Scientific Review Committee convened by the California Department of Pesticide Regulation (DPR) concluded that "**any anticipated scenario for the agricultural...use of this agent**



Too Close for Comfort: Just a few feet from a home in rural California, an applicator fumigates the soil.



Credit: Lauren Sommer, KQED; Adrienne Wollman, NPR

would...have a significant adverse impact on the public health.”

Scientific opposition to methyl iodide has been present and growing since the chemical was first proposed for registration at the federal level. At this time, a panel of 54 distinguished scientists, including six Nobel laureates in chemistry, publicly opposed its registration. Their 2007 letter to U.S. EPA officials said:

We are perplexed that U.S. EPA would even consider the introduction of a chemical like methyl iodide into agricultural use. The Agency has spent a great deal of effort to reduce industrial toxic emissions from chemical manufacturing plants. It is astonishing then that the Office of Pesticide Programs is working to legalize broadcast releases of one of the more toxic chemicals used in manufacturing into the environment.

As members of the scientific community, we urge you to do whatever is possible to prevent this chemical from ever becoming a registered pesticide.

When the decision came to California, an independent panel of scientists convened by the state’s DPR reviewed the chemical’s toxicity and analyzed what would *actually* happen if it were applied, under real life conditions, to fields in California. The conclusions they came to were sobering, leading them to label methyl iodide “one of the most toxic chemicals on earth”, and warn that it would be “difficult, if not impossible, to control.”

“It’s certainly possible to grow commercially-viable and ecologically sound strawberry crops without using methyl iodide or any other chemical pesticides.”

—Jim Cochran, California organic strawberry farmer of 25 years

In deciding to approve methyl iodide, DPR ignored the findings of top scientists—including the state’s own Scientific Review Committee—who have consistently said that the chemical is too dangerous to be used in agriculture. Upon hearing the DPR decision to register the chemical, Dr. John Froines, chair of the Committee, told press, “I honestly think that this chemical will cause disease and illness. And so does everyone else on the committee.” Theodore Slotkin, another panel member and professor of pharmacology and cancer biology at Duke University, wrote, “It is my personal opinion that this decision will result in serious harm to California citizens, and most especially to children.”

Methyl iodide will cost California

Not only is methyl iodide extremely expensive for growers to use, but it will also cost the state of California money. For example, it would require significant resources just to monitor and enforce regulations during applications, a burden that would fall on resource-strapped County Agricultural Commissioner offices. In addition, methyl iodide is a potential groundwater contaminant, which means it could cost the state millions in clean up, as well as resulting in widespread health effects which would exacerbate these costs. We can learn our lessons from DBCP, also a fumigant pesticide that contaminated much of California’s groundwater in the 1990’s. In ensuing legal settlements, nearly \$7 million were allocated to sixteen different districts for clean up of this pesticide.²

The public has rejected methyl iodide

The California public is paying close attention to this issue: when DPR opened a public comment period on methyl iodide, more than 50,000 concerned citizens submitted comments within the space of a few weeks. Never before in the history of the DPR has this agency received so much opposition to the registration of a new pesticide. The message is clear: Californians don’t want methyl iodide.

Other states have rejected methyl iodide

Almost every state that has its own independent review process* has chosen *not* to register methyl iodide in their state. The sole exception to this is Florida.

Europe has also banned methyl iodide on the basis of the fact that it is an outmoded and highly toxic technology. In fact, methyl iodide is a fumigant gas—a kind of agricultural technol-

* Most states don’t have additional oversight of agricultural chemicals so when methyl iodide was approved at the federal level, it became automatically registered in these states.

Other States That Have Approved Methyl Iodide After Reviewing It Independently



ogy that was invented in the 1800s,³ and has not been significantly updated since.

Several California growers reject methyl iodide

After careful research into the pros and cons of methyl iodide use, many farmers, including large-scale strawberry growers, have decided the risks simply outweigh the benefits, and have resolved not to use this toxic chemical on their fields. Well-Pict Berries, for example, have publicly stated that they don't plan to use methyl iodide.⁴

California's strawberry industry can thrive without methyl iodide

Strawberry production in California has been consistently growing since the 1970s, without this chemical on the market. Meanwhile, methyl bromide use in the United States has decreased 90% since 1995, dropping from 25,500 metric tons in the early 1990s to 2,200 metric tons in 2009⁵. California farmers have innovated and kept their yields high—and growing—without methyl bromide. “Over 50% of California strawberries are now produced without the use of methyl bromide and that percent likely will increase yearly,” according to the EPA.

The oft-cited paper that claims that de-registration of methyl iodide would lead to a significant economic hit *does not at all consider* the viability of other alternatives. The authors openly state “Our approach to estimating the cost of MeI non-registration assumes that the loss of gross revenues from the unavailability of MBr *could not be mitigated through other alternatives*” (emphasis added).” This logic undermines innovation, the very

driver of California's agricultural success and the specialty of California farmers.

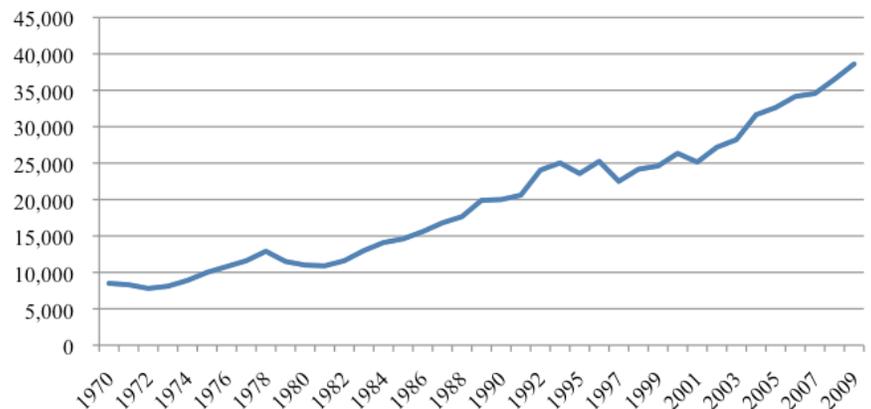
Organic strawberry production has a superior economic profile than conventional production, generating \$41,250 in revenue per acre of organic strawberry production and \$14,908 profit per acre.⁷ With price premiums that range from 40% to 176%, California farmers would therefore benefit from organic production.⁸

Safe alternatives to methyl iodide will create green jobs and boost California's economy

California is at a truly historic fork in the road: We can either choose to return to toxic and outmoded fumigant gases like methyl iodide (now banned in Europe and elsewhere), or we can choose to look forward to the future, and take the lead on developing new agricultural technologies which can serve as a model for the rest of the nation and indeed the world. By investing in research on methyl iodide

alternatives, we can spur the green jobs sector and create a whole new industry in California, reclaiming our role as innovative leaders of agriculture in the United States.

CA Strawberry Acreage



A “record number of strawberries” are being produced this year⁶

Supporting California farmers with safe alternatives must be top priority

Safe alternatives exist for methyl iodide, but they require more support for research, development, in-field trials, and scaling up. Implementing much safer alternatives to methyl bromide is a challenge California can meet.

Priorities for implementation of safe alternatives include:

- Organic production methods. Organics are the fastest growing sector of the agricultural industry, and strawberry production using certified organic methods increased by a whopping 78% between 2006 and 2010.⁹

- Making the options that already exist to successfully grow strawberries without reliance on methyl bromide publicly available, including disease-resistant cultivars and the development of practical implementation strategies for a combination of: soil solarization, steam sterilization, alternative substrate cultivation, anaerobic soil disinfestation, crop rotation and biofumigation, along with other options.

Continuing research and innovation into non-chemical alternatives that can be adopted by conventional growers. Such research in innovative new technologies could potentially lead to huge economic returns, while decreasing farmers' dependence on expensive equipment, chemicals, and other inputs. Therefore, it is a top priority for the state of California to create a *Methyl Bromide Alternatives Research & Implementation Plan*.

Create a state-backed insurance program for strawberry growers who farm without fumigants, to facilitate the implementation of safer alternatives.

And finally, in keeping with the wishes of public sector educators, legislators must work with CalPERS and CalSTRS to divest from Permira IV, the holding fund for the Arysta Life-Science Corporation, the sole manufacturer of methyl iodide. Instead, investments should be made through both the private and public sectors to transition farmland from conventional to organic uses.

If California legislators understand the importance of California soil, they will invest in these health-protective and economically sound options, not in "the most toxic chemical on earth."¹⁰

Notes

- 1 Froines et al, "Report of the Scientific Review Committee on Methyl Iodide to the Department of Pesticide Regulation". Feb 2010.
- 2 The Fresno Bee. "Valley cities divert cleanup funds" Jun 22, 2009.
- 3 Capinera, John L. "Encyclopedia of Entomology" 2nd ed. Springer-Verlag, 2008.
- 4 The Packer. "Methyl iodide approval prompts protest." <http://thepacker.com/Methyl-iodide-approval-prompts-protests/Article.aspx?oid=1307416&fid=PACKER-SPECIAL-SECTIONS&aid=242>
- 5 U.S. EPA <http://www.capitalpress.com/specialsection/seed/TH-seed-methyl-bromide-photos--infobox-p-3>
- 6 June 23, 2010, "Consumers Get Answers For What To Do With Record Number Of California Strawberries" <http://www.calstrawberry.com/commission/inthenews.asp?itnID=101>
- 7 U.C. Davis, "Sample Costs to Produce Organic Strawberries". 2006. <http://coststudies.ucdavis.edu/files/strawberryorgcc06.pdf>
- 8 United States Department of Agriculture, Economic Research Service.
- 9 California Strawberry Commission. 2010 Acreage Survey – Update. http://www.calstrawberry.com/fileData/docs/2010_Acreage_Survey.pdf
- 10 Dr. John Froines, Chair of Scientific Review Committee on Methyl Iodide. Senate Hearing, 2010.

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