May 13, 2011

Administrator Lisa Jackson
US EPA Headquarters
Ariel Ross Building
1200 Pennsylvania Avenue, NW
Mail Code 1101 A
Washington DC 20460

Delivered electronically to docket EPA-HQ-OPP-2010-0541

Dear Administrator Jackson,

As environmental justice organizations and allies working across the country for green, fair and safe economic development and social policy, we are writing to urge you to suspend and cancel all registrations of methyl iodide (iodomethane) in the United States.

The science on methyl iodide’s toxicity is clear and indisputable, and has been discussed at length as part of the scientific review conducted by California’s Department of Pesticide Regulation. In addition to the new analysis brought to light during that review, the enclosed Preliminary Environmental Justice Analysis of Proposed Methyl Iodide (Iodomethane) Use examines environmental justice implications and questions related to the use of this chemical. This analysis shows that communities of color, and lower-income Latino/a rural communities and farmworkers in particular, will face the highest exposures to this chemical and a disproportionate impact from its use. In addition, these communities already face health harms from exposure to pesticides, as documented in research released in Environmental Health Perspectives just this month,¹ and there has been no analysis of how the cumulative exposure to several pesticides, including iodomethane, will affect these communities.

Key environmental justice concerns include:

- Cumulative exposures to multiple chemicals by rural residents and farmworkers;
- Latino/a rural communities and workers taking the brunt of the chemical exposure while gaining precious little from use of the chemical. In fact, some analysts estimate that more than double the jobs would be created if organic practices were to be used instead of methyl iodide; and
- Lack of access to decision-making systems and policymakers. The majority of the most impacted communities are monolingual Spanish speakers with limited access to electronic communications. The process established by U.S. EPA for consulting with these communities on the methyl iodide decision has effectively excluded their participation. Any solution to better include the perspectives of those most likely to

be impacted by your decision must be done during a moratorium of chemical use, so that these communities do not continue to be exposed while consultations move forward.

The report, Preliminary Environmental Justice Analysis of Proposed Methyl Iodide (Iodomethane) Use, shows that the counties, townships, cities and regions where methyl iodide is used (or, in the case of California, will be used) are over-represented by people of color and minority communities, compared to the general populations of those locales. Our research shows that these communities also tend to have below-average levels of income and educational attainment, and above-average levels of poverty. In addition, 78 percent of our farmworkers — the people who would be most directly and dangerously exposed to methyl iodide — are foreign-born, and 92 percent of them are not covered by employer-provided healthcare, meaning that they would not have access to resources in a situation of pesticide poisoning.

This stark reality provides the unfortunate context for use of methyl iodide, a blatant racial and environmental injustice. Over the years and under your leadership, we have seen the U.S. Environmental Protection Agency make great strides in its commitment to, and work on, environmental justice concerns. The cancellation of methyl iodide is the next crucial step in this work, and the undersigned organizations are a few of the many constituents who expect to see the issue of methyl iodide, and pesticides more generally, taken up as an important environmental justice issue by your agency.

Most sincerely, on behalf of the undersigned (in alphabetical order by organization)

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Maricela P. Morales, Central Coast Alliance United for a Sustainable Economy (CAUSE)
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Sandy Brown, Swanton Berry Farm
Marylia Kelley, Tri-Valley CAREs
Eunice Martinez, Unidos por un Cambio in Tuleyville
Sal Lua and Dvera Saxton, Wastonville Autonomous Chapter of the Brown Berets
Preliminary Environmental Justice Analysis of Proposed Methyl Iodide (Iodomethane) Use as a Soil Fumigant
Prepared for docket EPA-HQ-OPP-2010-0541 by Pesticide Action Network North America on behalf of the individuals and organizations listed at the conclusion :: May 11, 2011

Executive Summary

The United States Environmental Protection Agency (U.S. EPA) defines environmental justice as:

... the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. EPA has this goal for all communities and persons across this Nation. It will be achieved when everyone enjoys the same degree of protection from environmental and health hazards and equal access to the decision-making process to have a healthy environment in which to live, learn, and work.

Initial analysis shows that the use of methyl iodide (iodomethane) as a soil fumigant pesticide in agriculture violates U.S. EPA’s commitment to environmental justice. Our analysis draws on data from California and Florida, two of the projected highest use states, using interviews and methyl bromide use statistics as a proxy for likely methyl iodide applications in some cases. Our preliminary analysis shows that Latino/a communities and lower income rural communities would face the most significant exposure and bear the most significant costs of this pesticide.

When federal policy or practice places an undue burden on communities of color or low income communities, environmental justice is violated. The costs of the federal policy decision on methyl iodide/iodomethane, as shown during the scientific review in California, are significant. They include: cancer, late-term miscarriages, neurodevelopmental issues and contaminated groundwater. Additional key environmental justice concerns include:

- Cumulative exposures to multiple chemicals by rural residents and farmworkers (Eskenazi, et al.);
- Latino/a rural communities and workers taking the brunt of the chemical exposure while gaining precious little from use of the chemical; and
- Lack of access to decision–making systems and policymakers. The majority of the most impacted communities are monolingual Spanish speakers with limited access to electronic communications. The process established by U.S. EPA for consulting with these communities on the methyl iodide decision has effectively excluded their participation.

Any solution to better include the perspectives of those most likely to be impacted by US EPA policy must be applied during a moratorium of methyl iodide/iodomethane use, so that these communities do not continue to be exposed while consultations move forward.

Background

Methyl iodide, or iodomethane, is a colorless transparent liquid with a pungently sweet ether-like odor. When exposed to light, it releases iodide and turns brown. Methyl iodide is soluble in alcohol, ether and carbon tetrachloride, and partially soluble in water. Methyl iodide is produced naturally, as are many other hazardous substances, by algae in marine ecosystems.

...
Methyl iodide has two main characteristics that scientists and pesticide corporations find useful: it is unstable and it kills things. In laboratories, this highly reactive agent is used by scientists in microscopy, and chemical synthesis, and DNA methylazation to induce cancer. Agriculturally, methyl iodide is increasingly being used as a soil fumigant pesticide in strawberry, tomato, eggplant, and pepper cultivation. Soil fumigant pesticides are by definition toxic and volatile. They are injected into the soil prior to planting in order to kill the vast majority of organic life in the soil. With continued international pressure on the U.S. to comply with the mandatory phase out of methyl bromide, a fumigant pesticide found to harm the ozone layer, methyl iodide has been proposed by manufacturer Arysta LifeScience as a replacement. As methyl bromide stocks decline, it is critical that farmers have access to research and tools that allow farmers to implement safer and more ecologically sound alternative pest management strategies. However, methyl iodide has no place in that toolbox. Scientists, farmworkers, many farmers and a concerned public are united in asserting that methyl iodide is not an acceptable replacement for methyl bromide because it is even more hazardous for human health than methyl bromide, is expensive for farmers, and requires significant restrictions on use that are not possible to implement in real-world conditions.

Toxicity
Professor John Froines, University of California Los Angeles and chair of the California Department of Pesticide Regulation Scientific Review Committee on methyl iodide has said of methyl iodide, “This is without question one of the most toxic chemicals on earth.” While the EPA has yet to acknowledge methyl iodide as a carcinogen, it is considered a human carcinogen by the state of California. Methyl iodide is also found on three other state regulatory lists: Air Contaminants (California Occupational and Safety Health Act) California Air Toxics "Hot Spots" Chemicals (Assembly Bill 2588) California Toxic Air Contaminants (Assembly Bill 1807); and six federal lists: Air Contaminants (Occupational and Safety Health Act), Hazardous Air Pollutants (Clean Air Act), Hazardous Constituents (Resource Conservation and Recovery Act), Hazardous Substances (Superfund), Inhalation Hazard Chemicals (Department of Transportation) Toxic Release Inventory Chemicals. The national government recognizes methyl iodide as a hazardous air pollutant and a toxic air contaminant. In 1994, the EPA recognized that methyl iodide causes skin blistering, severe eye and respiratory tract issues, as well as pulmonary edemas. Methyl iodide is neurotoxic and hepatotoxic. It has been known to cause nausea, vomiting, ataxia, slurred speech, drowsiness, convulsions, coma, and other effects to the central nervous system.

Regulators must take into account that a simple industrial mistake in handling methyl iodide could adversely affect an entire community for generations.

Injustice: California
To determine whether an environmental justice issue is at stake, staff at Pesticide Action Network North America analyzed demographics related to the current use statistics from California for methyl bromide, since there are not yet use statistics for methyl iodide, but it is promoted by its manufacturer, Arysta LifeScience, as a drop-in replacement for methyl bromide.

As with many inequities, the disparity is not immediately apparent. An analysis of methyl bromide use by county in California reveals widespread use across particular counties, with no particular trend in demographics. However, this hazy picture belies a hidden truth: an analysis by township reveals that the communities that are most likely to live near use of this toxic chemical are...
small, rural communities, many of which have over-represented populations of minorities/communities of color. [Fig. 2]

Townships are units of land no larger than six square miles as used and defined by the United States Public Land Survey System. Figure 3 shows how the use of methyl bromide is concentrated in mostly small rural communities, many of which have large Latino/a populations.

The California Environmental Health Investigations Branch has three different categories to help visually distinguish the amount of pesticide used within the defined boundaries. For townships, 0 to 1,881 total pounds is the lower 50 percentile (pale pink in color), 1,881 to 17,194 total pounds is in the 50 to 75 percentile range (pink), and more than 17,194 pounds is above the 75th percentile (red). For the sake of simplicity these categories shall henceforth be referred to as light, moderate, and heavy respectively; moreover, we consider anything above 100,000 pounds of this chemical used within the boundaries of any given city or township to fall into a fourth category: excessive.

Figure 4 compares the cities and townships with moderate to excessive methyl bromide use with the % of Latino residents they have. California is only 37 % Latino/a, as indicated by the red line; cities with an overrepresentation of Latinos (more than 37 %) are seen on the right side of the red line. Thirty-two cities that would use methyl iodide have an overrepresented Latino/a population.
Further, of the top ten cities that would have ‘excessive’ usage of methyl iodide [Fig. 4] (Elkhorn, Guadalupe, Interlaken, Macdoel, Marina, Oxnard, Salinas, Santa Maria, Spreckels and Watsonville), seven of those ten, or 70%, have an over-represented Latino/a population. This means that the areas using the most methyl iodide — hundreds of thousands of pounds of this dangerous chemical — would be populated mostly by marginalized, minority communities that likely would not have the resources to adequately protect the health and safety of their residents, or to litigate, if their health and safety were compromised.

Townships 43M11S03E, 44M12S01E, 44M12S02E, 44M12S03E, 44M11S03E, and 27M12S02E are all located within six miles of the city of Watsonville, and a total of 715,005 pounds of methyl bromide were used in the area. This makes the Watsonville area the heaviest potential user of methyl iodide. Watsonville is 75% Latino. 36.4% of Watsonville’s adult inhabitants have less than a ninth
grade education, 45.4% speak English less than “very well,” and nearly a fifth of its citizens live in poverty.\textsuperscript{12}

Similarly, Macdoel, the city with the second highest usage (484,989.34 pounds), is 63.1% Latino/a. Almost none of its population have college degrees and a fifth of its population also live in poverty. Santa Maria, the third heaviest user at 422,970.78 pounds, is made up of 60% Latino/as, with a third that speak English less than very well, the majority without higher education, and almost a fifth of its population living below the poverty line. The city with the fourth highest usage, Oxnard, is 66% Hispanic, a third of its residents speak English less than very well and 25,000 live below the poverty line.

Statistics for the cities with excessive usage typically all look the same: overrepresented population of Latino/as, 25–30% that have difficulty speaking English, little higher education, and large numbers living in poverty.

Injustice: Florida

Methyl iodide has already been registered in Florida. Because Florida does not have a comprehensive pesticide use reporting system such as the one maintained by the California Department of Pesticide Regulation, we are unable to report precise quantities of methyl iodide applied. Instead we use the acreage of tomato, strawberry, pepper, and nursery crops (as reported by Purdue University’s CropMAP tool) as a proxy variable, as these tend to be the crops on which methyl iodide is most heavily used. For the purpose of this paper, we will group these crops together under the label “MeI crops”.

In Dade County, which has an over-representation of both African American and Latino/a populations, over 2 million acres of land are planted with MeI crops (the second-highest in the state). The percentage of the population with Latino/a origins in Dade County is three times the state average. The immigrant population is also three times the state average, while educational attainment levels are lower than the state average. Homeownership and income levels are also lower than Florida averages, while the percent of the population below the poverty line is an extraordinary 16.5%. This underserved and already disadvantaged population is the same one that is potentially exposed to over 2 million acres of methyl-iodide fumigated soil.

Hillsborough County has the highest acreage of MeI crops, as well as, unsurprisingly, an over-representation of all minority populations (excluding Native Hawaiian/Pacific Islander, which is the same as the state average). Homeownership rates here are below the state average, while the percentage of the population below the poverty line is more than the state average. Orange County, which grows over a million acres of MeI crops, has an over-representation of both African American and Latino/a populations. The percentage of people living below the poverty line is above the state average, while the homeownership rate is almost 10% below the state average.

Broward County, which grows an estimated 30,000 acres of MeI crops, has an over-representation of both Latino/a and African-American populations. Collier County (over 435,000 acres of MeI crops), although largely Caucasian, has an over-representation of Hispanic/Latino citizens as compared to the state average. Hardee county, which grows almost 250,000 acres of MeI crops, is over 40% Hispanic. The educational attainment of this population is significantly lower than the state average, as are income levels.
The list goes on, but in sum: the 10 counties with the highest acreage of MeI crops have, on average, an over-representation of minority populations-communities of color.

It is important to note, however, that even in towns and cities without large minority populations, minority groups are still the ones most heavily involved in farm work and consequently the ones most likely to suffer the grave consequences of toxic farm chemicals. In 1997-1998, 81% of all farm workers in the U.S. were foreign-born, with the vast majority coming from Mexico. This is particularly important in light of the fact that foreign-born farm workers are considerably more likely to be impoverished than those born in the United States: 65% vs. 42%, and therefore to have less access to resources when poisonings occur.

Long term effects of cancers, nerve system damage, and respiratory tract issues associated with methyl iodide exposure are not reversible. Rather than waiting for a documented increase of methyl iodide-caused illnesses, U.S. EPA should make a decision based on sound science and protect the wellbeing of rural residents by taking this dangerous chemical off the market.

**Farmworkers speak**

Farmworkers across California spoke out about their field experiences at a hearing on methyl iodide held August 19, 2009, by California’s Department of Pesticide Regulation (CDPR).

“My family and my community are going to be exposed to death,” testified farmworker Francisco Cerritos. “That is why I urge you not to approve it and to think more about the environment and your families.”

Speaking to the industry talking point that methyl iodide has been used in the U.S. with “no untoward incidents” reported, farmworker Julian Cruz pointed to the vulnerability of farmworkers and their reluctance to speak out when injured or sickened by their work: “They [industry] say that there are no incidents, but unfortunately there are. It is just that because from fear, from not saying anything, it just stays like that [unreported].”

Due to problems associated with legal status, less education, low income and minimal access to resources, often compounded by an inability to speak English, most farmworkers endure jobs that they know to be dangerous because they are simply in no position to complain. Even so, farmworkers such as Teresa Espinoza took the opportunity of the CDPR hearing to share their fears. Referring to methyl iodide’s known potential to cause miscarriages and birth defects, Ms. Espinoza said: “We work in the fields, and there are many pregnant women, pregnant mothers. And doctors have said due to the very chemical there are a lot of miscarriages. There [are] three children in my family with asthma and with kidney problems due to the very fact we work[ed] in the fields while we were pregnant.”

**Alternatives**

It is not as though highly hazardous fumigants are essential to agriculture. Strawberries, one of the crops currently produced with heavy use of fumigants, as well as other crops can be and are being grown without methyl iodide. A number of non-chemical alternatives are already in use. These include the use of improved cultivars/varieties, cultural practices (crop rotation, cover crops, natural fertilizers), biological control (using predatory species and bacteria instead of chemical pesticides),
and physical methods (such as soil solarization and anaerobic disinfestation). A new USDA study suggests that hot molasses could be an effective alternative to fumigation, as could poultry litter, mustard meal, cowpeas, and sorghum.

Several studies point to the fact that organic agriculture is more sustainable, just as profitable, and healthier than conventional pesticide-reliant farming. A recent scientific study specifically examines strawberries, and provides empirical evidence that the organic product is nutritionally superior to its conventional, fumigated counterpart (Reganold, et al.). In addition, this same study documents that organic strawberries leave the soil healthier. Although organic techniques are sometimes more complicated, they have been demonstrated to be just as profitable for farmers in the long-term, as yields eventually stabilize at levels that are either equal to, or sometimes even in superior to, yields from conventional farms. The slight (and sometimes positive) yield differential, in combination with price premiums for organic produce, means that organic farming could be just as, if not more, profitable, and certainly more sustainable, for farmers, while providing safer working conditions for farmworkers and reducing toxic exposures of neighboring communities.

U.S. EPA has the opportunity to make a decision that benefits farmers, farmworkers, rural communities, and our natural resources. Taking methyl iodide off the market would protect our people, soil and water from iodide contamination and, in particular, would protect low-income farmworkers and communities of color living in rural districts from reproductive and nervous system damage, as well as from cancer.

In sum, when factoring in the disproportionate racial and environmental justice impacts of methyl iodide use, there is strong evidence that the fumigant cannot be safely or justly used.

Individuals and organizations supporting these comments

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