

April 25, 2013

To: Members of the Assembly Committee on Environmental Safety & Toxic Materials

From: Assemblymember Luis Alejo, Chair

Subject: Oversight Hearing on Finding Alternatives to the Use of Fumigants in Strawberry Production

The Assembly Environmental Safety and Toxic Materials Committee (ESTM) will be holding an oversight hearing on Tuesday, April 25, 2013, focusing on the use of fumigants in strawberry production in California. The Committee will be reviewing the actions of state agencies, including the Department of Food and Agriculture (DFA) and the Department of Pesticide Regulation (DPR), to both regulate the use of fumigants and to develop and support the use of less hazardous alternatives to fumigants among strawberry growers.

The Committee will ask agencies, growers, researchers and community members about the future of fumigant use. Among the specific issues of concern are:

1. What are the likely effects in California of the ongoing methyl bromide phase-out pursuant to the *Montreal Protocol on Substances that Deplete the Ozone Layer* (Montreal Protocol) and the federal Clean Air Act (CAA)?
2. How will California strawberry growers be affected by the long-term methyl bromide requirements of the Montreal Protocol and the state's steps to support or restrict future critical use exemptions (CUEs) under the Montreal Protocol?
3. Have California state agencies identified populations at higher risk from adverse effects of methyl bromide and other fumigants?
4. What are the steps taken by the State of California to reduce exposure to methyl bromide and other fumigants used in strawberry production?
5. What will be the implications of the recommendations of the *Nonfumigant Strawberry Production Working Group Action Plan*?
6. What steps will the State of California take to implement the research and development strategy outlined in the *Nonfumigant Strawberry Production Working Group Action Plan*?

Background

In 2011, California strawberries represented 88 percent of the U.S. domestic crop with 2.3 billion pounds harvested for a value of \$2.4 billion. According to the California Department of Food and Agriculture, strawberries are the sixth most valuable fruit crop produced in California.

According to the California Strawberry Commission, in California strawberries are planted on more 38,300 acres. Coastal California's rich sandy soil and temperate climate extends the strawberry growing season 500 miles up the coast from San Diego to the Monterey Bay. Strawberry production shifts between north and south with the changing seasons. Fall and winter production starts in October in Ventura County and reaches south into Orange and San Diego Counties in late December or early January. Production in the south generally extends into April or May. Staggered planting schedules in the Santa Maria area bridges the seasons, with the harvest beginning in March, and continues into the late fall.

California's northern strawberry growing region is south of San Francisco and includes Santa Cruz and Monterey Counties and some acreage in Santa Clara and San Benito counties. Watsonville and Salinas account for almost half of the state's strawberry acreage. Shipments from northern areas begin in April, peak in May or June, and continue through November.

Strawberry growers have relied on soil fumigation treatments, most notably methyl bromide, to address soil borne pests. Methyl bromide (MeBr) is an odorless, colorless gas that has been used as a soil fumigant and structural fumigant to control pests across a wide range of agricultural sectors. According to the United States Environmental Protection Agency (US EPA), exposure to methyl bromide may occur during fumigation activities. Methyl bromide is highly toxic. Studies in humans indicate that the lung may be severely injured by the acute (short-term) inhalation of methyl bromide. Acute and chronic (long-term) inhalation of methyl bromide can lead to neurological effects in humans. The US EPA has classified methyl bromide as a Group D, not classifiable as to human carcinogenicity.

Montreal Protocol on Substances that Deplete the Ozone Layer

Because methyl bromide depletes the stratospheric ozone layer, the amount of methyl bromide produced and imported in the U.S. was reduced incrementally until it was phased out in January 1, 2005, except under certain exemptions, pursuant to our obligations under the Montreal Protocol and the CAA.

The Montreal Protocol was adopted in September 1987. Following the discovery of the Antarctic ozone hole in late 1985, governments recognized the need for firm measures to reduce the production and consumption of a number of chlorofluorocarbons (CFC) – chemicals that were widely used in aerosol, refrigeration, foam and solvent applications. The Montreal Amendment of 1997 finalized the schedules for phasing-out methyl bromide.

According to the Pacific Area-wide Program for Integrated Methyl Bromide Alternatives, a joint project of the United States Department of Agriculture and UC Davis, the methyl bromide phase out began with freezing production and import of the fumigant at the 1991 use levels. From

1995 to 2005, incremental decreases in use were planned (developing countries have until 2015) with the exception of allowable critical use exemptions (CUE) and quarantine and reshipment exemptions. Under the Montreal Protocol “a use of methyl bromide should qualify as ‘critical’ only if the nominating Party determines that:

1. The specific use is critical because the lack of availability of methyl bromide for that use would result in a significant market disruption; and
2. there are no technically and economically feasible alternatives or substitutes available to the user that are acceptable from the standpoint of environment and public health and are suitable to the crops and circumstances of the nomination.”

Each year, the US EPA solicits applications for CUEs from methyl bromide users. The U.S. Government, after reviewing the applications, seeks authorization for those uses from the parties to the Montreal Protocol. Once the parties authorize critical uses and an amount of methyl bromide for those critical uses, US EPA publishes a rule allowing for the production of critical use for methyl bromide.

In October of 2012, the State of California recommended that US EPA seek a supplemental CUE for California strawberries to bring the total CUE to approximately 1.5 million pounds of methyl bromide, or 600,000 kilograms, for 2014, and consider a similar amount for 2015. That request is currently pending with US EPA and the U.S. Department of State.¹

Nonfumigant Strawberry Production Working Group Action Plan²

In April of 2012, DPR convened a 10 member work group to develop a 5 year plan to accelerate the development of tools and practices to control soil-borne pests in strawberry fields without fumigants. That working group completed their work in April of 2013 and released the *Nonfumigant Strawberry Production Working Group Action Plan*.

The goal of the working group plan is to help maintain the viability of the state’s strawberry industry in the face of increasing restrictions on fumigant use and the phase-out of methyl bromide.

The working group identified the need for collaborative research to test combinations of alternatives in extensive field trials and on-farm demonstrations. The recommended priority actions are categorized into three focus areas: Discovery, Research and Evaluation, and Adoption and Demonstration:

1. Discovery recommendations include:

¹ Letter from Karen Ross, Secretary ,CA Department of Food & Agriculture & Matthew Rodriquez, Secretary, CA Environmental Protection Agency to Honorable Hillary Clinton and Honorable Lisa P. Jackson, October 10, 2012.

²California Department of Pesticide Regulation, Nonfumigant Strawberry Production Working Group Action Plan, April 2013.

- Expand breeding programs for genetic resistance to soil borne pests.
 - Investigate, monitor and manage soil microbial populations to promote plant health.
2. **Research and Evaluation recommendations include:**
- Improve viability of options such as anaerobic soil disinfestation, biopesticides, biofumigants, soilless substrate, steam, and solarization.
 - Determine how these techniques could be combined into an integrated pest management system.
 - Promote more collaborative research.
3. **Adoption and Demonstration recommendations include:**
- Ensure comprehensive and easily accessed resources are available for producers online.
 - Develop ways to mitigate risks growers take when adopting new practices early. Consider new approaches to grants for growers and new options for crop insurance.
 - Foster early adoption of alternative practices, such as in regions with nearby sensitive sites like schools.

Future Potential Regulatory Actions

The phase-out of methyl bromide has been difficult for the California strawberry industry. Strawberry producers are faced with the certainty that methyl bromide will no longer be available to them by 2015, and they also must deal with increasing regulatory stringency on the use of all soil fumigants.

Methods of strawberry production that do not use fumigants include crop production in substrates and soil disinfestation with anaerobic soil disinfestation or steam. All of these systems need to be evaluated on a much larger scale with different soil types to determine commercial feasibility and cost-effectiveness. The development of barrier films has been reported to help trap fumigants in the soil and reduce the likelihood that neighbors will be exposed to fumigants.

Multiple production schemes, both fumigant and nonfumigant would allow producers to rotate treatments to take advantage of a variety of mechanisms to suppress soil pests³

³ Pacific Area-wide Program for Integrated Methyl Bromide Alternatives.