

## **METHYL BROMIDE**

### **INTRODUCTION**

Since methyl bromide is to be banned nationwide, the Grand Jury wanted to know the Ventura County Agricultural Commission's position on its usage and to observe the application process. An investigation was conducted to determine whether application of the pesticide was in compliance with State standards.

### **BACKGROUND**

The Ventura County Agricultural Commission's mission statement:

- Promote and protect the agricultural industry and environment of Ventura County and the State of California by enforcing specific laws, regulations and ordinances enacted by the Ventura County Board of Supervisors and the mandated provisions of the Food and Agricultural Code of the State of California.
- Participate in the development of and implementation of new state laws, regulations and ordinances pertaining to the agricultural industry.

### **INQUIRY**

The Grand Jury reviewed pertinent sections of the California Code of Regulations, Title 3, Food and Agriculture, Division 6, Pesticides and Pest Control Operations. The regulations address conditions under which those businesses are awarded a license to apply methyl bromide and how the inspectors follow the regulations. County Health and Agricultural Commission officials were interviewed. Officials and workers involved in the application of methyl bromide were interviewed. Local and national news items and an international magazine were noted. Agricultural fields and a fumigation chamber were visited over a two month period.

### **FINDINGS**

- The Agricultural Commission issues yearly certification permits to businesses and/or individuals authorized to apply methyl bromide. Certification is awarded after the applicants pass a written examination administered by the Agricultural Commission.
- Methyl bromide is a pesticide that eradicates pests and increases crop yields which translate into increased revenue for Ventura County.
- Methyl bromide is an odorless nonflammable substance which is stored in metal cylinders, similar in size, shape and material to oxygen tanks. The containers are clearly marked with warning labels, in English and Spanish, as to the toxicity of the contents. So that any leakage can be detected, chloropicrin, a noxious chemical, is added.
- Weather conditions are considered before the injection process takes place. Slight wind is desired, but strong winds or atmospheric inversion layers prevent the injection process. The Agricultural Commission, consulting with meteorologists, make the determination.

- The permit holder must give the Agricultural Commission a 24 hour advance notification of the intent to apply methyl bromide. Methyl bromide injection must begin no sooner than the intended time and no later than 12 hours after the expected starting time.
- Before the injection, signs in English and Spanish, are placed in the fields stating the intended use of the toxic substance. These signs are removed after the tarp's removal.
- The methyl bromide canisters are on a tractor designed for the application of the pesticide. The tractor is operated by a pilot who is skilled in driving and knowledgeable about all aspects of the application and dangers of said pesticide. The pilot and his assistants begin the procedure by slowly moving along the field, injecting the liquid into the soil 18 inches below the surface. The process is done with tubing leading from the canisters to the tractor prongs which are under the soil's surface. At the moment of its release from the canister, the liquid becomes a gas; it acts much like propane gas used in residential barbeques. At the same moment of injection into the soil, the fumigated parcel is covered by a plastic tarp, thereby trapping the toxic fumes. Two assistants with shovels, walk behind the tractor to press the tarp edges down into the soil to further ensure the containment of the gas.
- By law there must be a 30 foot buffer zone between the treated field and any structure.
- During the application process, at least one certified person must be present and an Agricultural Commission employee must be on-site during part of this procedure.
- Emergency information is available regarding treatment for persons who might come into contact with the chemical while applying it. Since hands are the most likely area to be affected, gloves are not worn because they fit tightly over the skin; clothing that can't "breathe" may delay the evaporation of the pesticide from the skin and can be absorbed into the body. Water is readily available for washing off if an emergency should occur.
- The plastic tarp is removed after 5 - 7 days; the gas moves very quickly into the air.
- The checklist used by the Agricultural Commission inspectors is intended to verify the compliance of the certified applicators of methyl bromide as stated in Title 3, Division 6.
- Our first field inspection revealed compliance with most of the sections of Title 3, Division 6 except some workers did not wear protective eyeglasses and/or baggy clothing, and no verbal instructions were given on the application of methyl bromide and emergency procedures prior to the inception of the application process. The supervisors appeared to be circumspect in answering our questions.
- Our second field inspection revealed compliance with all of Title 3, Division 6 rules regarding eye protection, clothing, and complete verbal instructions, in English and Spanish, given to the workers regarding the application of methyl bromide and emergency procedures should an accident occur. All the officials and workers answered our questions with completeness. We observed a display of enthusiasm for their profession.

- The fumigation chamber we visited was properly enclosed in a locked, fenced area with the required warning signs posted. County and State Agriculture officials were present to certify that the facility had a manometer- equipped safe chamber in which to "gas" strawberries with methyl bromide. This provides a leakage pressure test that checks the safe pressure ratio in an allotted time period. The two chambers passed the test and were given a one year approval. Since strawberries are exported overseas, some countries demand that the berries be treated before shipment. The berries are usually placed in the chamber about noon, at which time the methyl bromide is sprayed. After approximately three hours, aeration is done with the help of wind machines which are an integral part of the chamber structure. The pipestack is opened so that the gas is dispersed into the atmosphere. The officials used the same compliance checklist as was used for both field visitations.

**CONCLUSIONS**

1. The Ventura County Agricultural Commission appears to have a team of conscientious personnel who try to comply with State mandates.
2. The effect of having agricultural fields and residences juxtaposed is a common concern to Ventura County inhabitants.
3. The officials from the Agricultural Commission and the persons applying the methyl bromide appeared not to be in full compliance on our first field visit and to be in full compliance on our second field visit.
4. Methyl bromide exterminates pests and increases crop yields.

**RECOMMENDATIONS**

1. Require a meteorologist's report to be part of the compliance checklist prior to the application and before the tarp removal.
2. Require a meteorologist's report to be part of the compliance checklist to release the gas flow from the fumigation chamber through the pipestack.
3. Have field warning signs be eye level rather than at knee level.
4. Notify residents who live adjacent to the fields of the date and time of intended tarping application and removal.

**RESPONSE REQUIRED**

Agricultural Commissioner  
 Chief Administrative Office