



STATUS REPORT FOR FUMIGANT PESTICIDES

October, 2005

I. SCHEDULED AIR MONITORING

At DPR's request, the Air Resources Board (ARB) conducted ambient air monitoring for 1,3-dichloropropene and methyl bromide in Ventura County during August and September 2005 for the toxic air contaminant program. DPR may request additional monitoring for 2006.

At DPR's request, the ARB will conduct application-site monitoring for chloropicrin in Santa Barbara County during October 2005 for the toxic air contaminant program.

DPR will monitor for multiple pesticides including several fumigants in Parlier (Fresno County) as part of Cal/EPA's environmental justice action plan. DPR will conduct ambient air monitoring at several locations in Parlier for one year, beginning in January 2006. Additional information on the environmental justice action plan and the draft monitoring protocol are provided at the following Web page:

http://www.cdpr.ca.gov/docs/envjust/pilot_proj/index.htm

II. ACUTE BUFFER ZONE MODELING

DPR utilizes a standard methodology to calculate buffer zones for acute exposures. Fumigant pesticide registrants and some grower groups have suggested some specific refinements to the current modeling methodology that they believe will improve the procedure and incorporate local information and more representative meteorological conditions. Industry has proposed an alternative approach to DPR's modeling procedures. Their approach would incorporate historical weather data, revising the method to estimate flux and the method to determine the size of buffer zones. The alternative approach would be utilized by the industry at their discretion in specific areas. The standard DPR model would remain in place statewide. In June 2004, DPR received industry's draft results of using their methodology to identify regions of the state with comparable weather conditions through statistical analysis. DPR staff is reviewing the draft results.

In response to several requests, DPR has published guidelines for conducting fumigant air monitoring studies that can be used in conjunction with computer modeling to estimate off-site air concentrations. These guidelines are available at:

<http://www.cdpr.ca.gov/docs/empm/pubs/1707guidfumstuds.pdf>



III. METHYL BROMIDE

1. Risk Assessment/Data Evaluation

The completed methyl bromide risk characterization document is available at:
http://www.cdpr.ca.gov/docs/dprdocs/methbrom/riskasses_fum.htm

2. Risk Management Status

- Information on the methyl bromide regulatory issues is found at the following DPR Web site:
http://www.cdpr.ca.gov/docs/dprdocs/methbrom/fum_regs.htm

3. Critical Use Exemption Under the Clean Air Act

- The Parties to the Montreal Protocol granted critical use exemptions (CUEs) to the U.S. for 2005. In July 2005, the U.S. received a CUE for 2006 for 32% of the historic baseline. The U.S. Environmental Protection Agency (U.S. EPA) has issued a rulemaking for allocating CUEs among methyl bromide users for 2006.

IV. 1,3-DICHLOROPROPENE

- DPR continues to use the California Management Plan: 1,3-Dichloropropene (1,3-D) to manage the use of 1,3-D throughout California.
- Information on the California Management Plan: 1,3-Dichloropropene is found at the following DPR Web site:
<http://www.cdpr.ca.gov/docs/dprdocs/methbrom/telone/mgmtplan.pdf>
- Enforcement Letter, ENF 02-37 Recommended Permit Conditions for Using 1,3-D Pesticides (Fumigant) provides guidance to county agricultural commissioners and is posted on DPR's Web site at:
<http://www.cdpr.ca.gov/docs/enfcmpli/penfltrs/penf2002/2002menu.htm>

V. CHLOROPICRIN

1. Risk Assessment/Data Evaluation

- DPR requested that ARB conduct monitoring for an application site in 2004.

- On October 16, 2001, DPR placed all products containing chloropicrin into reevaluation. The reevaluation is based on data submitted under the Birth Defect Prevention Act. These data indicate that chloropicrin has the potential to cause adverse health effects at low doses. Air monitoring data submitted by the Chloropicrin Manufacturers Task Force indicate that the air levels of chloropicrin at some distances from treated greenhouses or fields could exceed the NIOSH standard of 0.1 ppm. Under the reevaluation, chloropicrin registrants are required to submit: (1) worker exposure studies for each type of chloropicrin fumigation site, and (2) ambient air quality monitoring and flux measurements from field and greenhouse applications, if methods other than the ones for which DPR already has data are to be employed. DPR received studies from registrants on December 8, 2004. DPR completed its review of the worker exposure monitoring data in April 2005.
- Chloropicrin is currently in the risk assessment process.
- DPR is coordinating certain aspects of the exposure and risk assessments (e.g., study evaluations) with U.S. EPA.

VI. METHYL ISOTHIOCYANATE (MITC) GENERATING COMPOUNDS

1. Risk Assessment/Data Evaluation

- The completed MITC risk characterization document is available at:
<http://www.cdpr.ca.gov/docs/empm/pubs/tac/finlmenu.htm>

2. Risk Management Status

- On December 2, 2002, DPR issued a public document that outlines its risk management decision.
- DPR listed MITC and other compounds that generate MITC as toxic air contaminants.
- On April 9, 2004, DPR issued a memorandum that outlines its risk management decision to mitigate acute, subchronic and chronic occupational exposures.
- Based on discussions in July 2004, U.S. EPA and DPR agreed to collaborate on the development of mitigation measures. DPR will coordinate its release of a mitigation proposal concurrent with U.S. EPA's management proposal. In the

interim, DPR staff is reviewing planned stewardship activities and proposals from the Metam Sodium Task Force.

- DPR has prepared a draft document regarding evaluation of illnesses caused by metam sodium, metam potassium, dazomet and MITC. The draft is currently in the peer review process.
- DPR is in the process of finalizing a draft MITC mitigation proposal document.

VII. SULFURYL FLUORIDE

1. Risk Assessment/Data Evaluation

- A risk assessment covering exposures from structural uses of sulfuryl fluoride has been completed. DPR identified sulfuryl fluoride as a potential toxic air contaminant under AB 1807, and presented a draft risk characterization document to the Scientific Review Panel. The Panel discussed and approved the risk assessment, with minor modifications, at its meeting on July 8, 2005. DPR will issue a proposed determination to list as a toxic air contaminant once it receives the Panel's written findings.
- ARB's monitoring report on structural fumigations is available at:
http://www.cdpr.ca.gov/docs/empm/pubs/tac/studies/sulfuryl_fl.htm
- DPR and ARB met with the registrant (May 2004) to discuss their plan to modify the current aeration procedure for structural fumigation. The registrant plans to conduct air monitoring during the development of the new procedure; co-sampling by ARB was also discussed.
- In February 2004, DPR received an application requesting registration of sulfuryl fluoride for use on a wide range of food commodities, such as dried fruits, almonds, walnuts, and other tree nuts, cereals and small grains, and cereal and small grain processed products in California. The Director found that the above uses of sulfuryl fluoride is not expected to cause any significant adverse effect on human health and the environment, provided additional mitigation measures are taken when fumigating large grain-processing and commodity-treatment facilities, and that there is a clear need for the product in California. Sulfuryl fluoride is proposed as a methyl bromide alternative for post-harvest fumigation of a variety of food commodities. Under the Federal Clean Air Act, 70% of methyl bromide production has been phased out. Therefore, DPR filed an emergency regulation with the Office of Administrative Law to designate sulfuryl fluoride as a

California restricted pesticide in section 6400(e), in order to allow CACs to immediately implement feasible mitigation measures through permit conditions, thus preventing the potential health risks associated with the off-site movement of sulfuryl fluoride to persons living near commodity-treated fumigation facilities. The emergency regulation became effective April 4, 2005. Subsequently, DPR registered sulfuryl fluoride on May 18, 2005. DPR is in the process of permanently adopting sulfuryl fluoride as a restricted material.

- DPR has received (August, 2005) a study proposal to generate exposure data for use of sulfuryl fluoride as a commodity fumigant using sterilization chambers. The proposal is undergoing review in accordance with California Code of Regulations 6710.

VIII. POTENTIAL NEW FUMIGANTS/FUMIGANT ALTERNATIVES

- DPR has received applications from Arysta, formerly Arvesta, to register products containing the active ingredient iodomethane (methyl iodide). DPR and the U.S. Environmental Protection Agency are conducting a joint review of the off-site air monitoring data.

DPR has issued a notice initiating the risk assessment for iodomethane and it is available at the following Web site:

<http://www.cdpr.ca.gov/docs/canot/ca2004-9.pdf>

DPR has received and reviewed off-site and worker exposure studies of methyl iodide by Arysta.

IX. U.S. EPA ACTIVITIES

U.S. EPA is conducting parallel risk assessments for methyl bromide, chloropicrin, 1,3-dichloropropene, metam sodium, dazomet, and iodomethane. DPR is assisting U.S. EPA with computer modeling to estimate bystander exposures. U.S. EPA released draft risk assessments for public comments on July 13, 2005. These documents are available at:

http://www.epa.gov/oppsrrd1/reregistration/soil_fumigants/

X. VOLATILE ORGANIC COMPOUNDS

Volatile organic compounds (VOCs) contribute to the formation of tropospheric ozone, which is harmful to human health when present at high enough concentrations. Many active and inert ingredients in pesticide products are VOCs. The federal Clean Air Act requires each state to submit a state implementation plan (SIP) for achieving and maintaining federal ambient air quality standards including the standard for ozone. The

1994 SIP requires a 12 percent reduction in pesticidal VOC emissions by 1999 in the San Joaquin Valley and a 20 percent reduction by 2005-2010 in four other areas of the State. U.S. EPA has established a more stringent ozone standard that will require additional VOC reductions from all sources, including pesticides. ARB and DPR will develop a new SIP that contains an element describing additional VOC reductions from pesticides. DPR estimates that 50-60 percent of VOC emissions from pesticides are due to fumigants.

In May 2004, the Association of Irrigated Residents and others filed a lawsuit against DPR and ARB alleging that the 1994 SIP provisions are not being met.

In January 2005, ARB approved funding for two research studies. One study by Dr. Scott Yates will evaluate alternative fumigation methods to reduce VOC emissions. A second study by Dr. Bill Carter will determine the reactivity (ability to create ozone) of several pesticides, including some fumigants.