FAQ: Regulating Chloropicrin

What is chloropicrin and how is it used as a pesticide?

Chloropicrin is used as a soil fumigant injected into the soil or applied through drip irrigation to control soil pathogens, nematodes, and certain weeds. Chloropicrin is not sprayed on crops. It is primarily used to treat soil prior to planting strawberries, raspberries, peppers, tomatoes, and melons. Strawberries account for about 70 percent of all chloropicrin use. Treated soil is often covered with plastic tarps as part of the fumigation application. Data shows that tarps, depending on the material, can greatly reduce the likelihood of chloropicrin exposure to people living and working near treated fields.

What are the current controls on chloropicrin?

Chloropicrin is designated as a restricted material under California law. Applications must be supervised by a certified applicator, and a permit must be obtained from the county agricultural commissioner (CAC) before it can be purchased and used. The permitting process requires CAC staff to review the proposed site of application and, when necessary, require specific use restrictions to protect nearby areas such as schools, businesses, and homes.

U.S. EPA has also completed a risk assessment of chloropicrin, which ultimately resulted in a number of new health-protective measures in 2012. DPR independently reviewed the new measures in light of California's climate, proximity of farms to some urban areas, and other factors, and it also reviewed new data. DPR determined that further controls would protect Californians against the acute effects of exposure.

What are the new restrictions on chloropicrin?

The additional control measures, developed after extensive public input, include the following:

- **Buffer Zones** – A buffer zone is an area surrounding a pesticide-treated field that allows airborne pesticide residues to disperse before reaching bystanders, occupied structures, or sensitive environmental areas. Activities are restricted in the buffer zone for a specified period of time after application of the pesticide.

  The new restrictions in many instances require larger buffer zones than those required by the U.S. EPA, sometimes as much as double in size. However, the controls make allowances for the use of tarps, particularly Totally Impermeable Film (TIF) tarps, a new technological advance that is highly effective at controlling fumigant emissions. When TIF tarps are used, smaller buffer zones apply.

- **Acreage Limits** – Current U.S. EPA labels allow chloropicrin applications up to a maximum of 160 acres per day. DPR is reducing the acreage limit to 40 acres per day. If TIF tarps are used, the application can be up to 60 acres per day.

- **Notification and Monitoring** – In some cases, current requirements specify that homes and businesses within a certain distance of treated fields be notified that fumigation will occur or that the fumigant applicator conducts monitoring during the 48 hours the buffer zone is in effect. Currently, notification is only required to be in English. DPR will require that notification also be made in Spanish. In addition, DPR will require that monitoring be conducted at two locations instead of a single location as currently required and will require immediate notification to the local county agricultural commissioner if any emergency occurs.

- **Notice of Intent** – DPR will require that growers provide the local county agricultural commissioner details of the upcoming fumigation at least 48 hours before the scheduled application. Current regulation requires a 24-hour notice.

Why is the Department of Pesticide Regulation announcing new mitigation measures?

Chloropicrin may pose a health hazard. Exposure can cause eye and respiratory irritation to workers handling the fumigant or to people who live or work near fumigated fields. Pesticide-related illnesses are unacceptable, and DPR's goal is to ensure that people and communities are protected. DPR data shows that less than 0.1 percent of all applications in California result in people being adversely exposed.

In 2012, U.S. EPA revised soil fumigant labels to protect workers and people living and working near fumigated fields. Nonetheless, DPR determined that California use conditions required additional measures to assure protection. By protecting people from these acute, reversible effects, the new restrictions will also protect people from seasonal and chronic respiratory health effects.

Are there risks associated with long-term exposure to chloropicrin?

DPR has required and reviewed numerous studies to identify the health risks from exposure to chloropicrin. This information is the basis for DPR's new mitigation measures. DPR concluded, based on its analysis and other available scientific information, that acute sensory irritation is the only adverse effect that requires mitigation and that these measures will also help protect people from any possible risk from long-term exposure.

As part of this review, DPR considered scientific studies related to the potential carcinogenicity of chloropicrin. The World Health Organization, U.S. EPA and the European Union have concluded that chloropicrin is not likely to be a human carcinogen. However, California's Office of Environmental Health Hazard Assessment and a state Scientific Review Panel concluded that it may be. DPR independently reviewed all of the existing research and concluded that there is insufficient evidence to establish that chloropicrin exposure causes cancer.

To obtain more data as part of its ongoing evaluation, DPR is requiring the registrants of chloropicrin to conduct a two-year mouse inhalation study. Requiring a registrant to conduct additional research on an existing pesticide is not uncommon. The new study is being required as part of DPR's mandate to continuously evaluate registered pesticides. Once the study has been conducted and the final report submitted, DPR will review the data and findings, share the results publicly, and take appropriate additional action if warranted.