

ANNUAL NEWSLETTER: PESTICIDE-RELATED ILLNESS IN CALIFORNIA

Office of Environmental Health Hazard Assessment



Pesticides and Illegal Cannabis Operations

The rapid spread of illegal, foreign-labelled, pesticide products found at foreign operated cannabis grows in California presents a new and evolving health risk to cannabis workers, first-responders, and consumers.

“Applied” by burning, these illegal products consist of individual packets filled with chemically-treated sawdust saturated with multiple pesticides, including various fungicides and highly toxic cholinesterase (ChE)-inhibiting organophosphate (OP) and carbamate (CB) insecticides.

As use of these products increases at rural and urban indoor grow sites, more pesticide-related illnesses are likely to occur, and health care providers should be aware of this new risk.

Illegal pesticide products can be difficult to identify because they often lack the required labeling, are not written in English, or are not stored in their original containers.

According to the Department of Pesticide Regulation (DPR), all illegal grow operations should be considered contaminated and a risk to those entering the site. Anyone entering illegal grows may be at risk of exposure, particularly via dermal and inhalation routes that could lead to acute pesticide illness requiring immediate treatment.

Though many different types of pesticides are found at illegal grows; ChE-inhibiting insecticides are commonly used. Therefore, any evidence of foreign-obtained pesticides should be considered as highly toxic ChE-inhibiting pesticides until proven otherwise.

Additionally, on-site personnel responding to these sites may benefit from ChE level monitoring to help prevent overexposure. Unlike agricultural workers who meet criteria for monitoring under the [California Medical Supervision Program](#), there is no specific protocol for monitoring ChE levels for other occupations, such as law enforcement or first responders. However, some suggestions have been created to support physicians following these patients.



In this issue:

Pesticides and Illegal Cannabis

PAGES 1-2

Pesticide Illness Reporting

PAGES 3-4



Suggestions for blood ChE level monitoring:

- Obtain baseline ChE levels (both plasma and RBC) after a 30-day exposure-free period for anyone who may be exposed to ChE-inhibiting pesticides on the job.
 - A “working baseline,” which is the longest practicable exposure-free period, may be obtained when circumstances preclude the achievement of 30 days.
- Obtain annual baseline levels thereafter.
- Consider obtaining follow-up testing in cases of exposure or concern about exposure as determined by the treating physician.



Organophosphate and Carbamate Poisoning:



Muscarinic Effects:

Miosis, salivation, lacrimation, urination, defecation, gastrointestinal pain, emesis, bronchorrhea, bronchospasm, bradycardia

Nicotinic Effects:

Tachycardia, weakness, paralysis, muscle cramps, twitching, fasciculations

Central Nervous System Effects:

headache, anxiety, ataxia, confusion, loss of consciousness, respiratory depression

Diagnosis

- Obtain both RBC and plasma ChE levels
- Identify specific signs and symptoms
- Complete an exposure history

Management

- Supportive care, especially of the respiratory system
- Atropine
- Pralidoxime
 - Recommended for OP/mixed exposures or when the specific pesticide is unknown.
 - Extreme caution is warranted if it is a known CB exposure as pralidoxime is of limited value and may be hazardous.
- Thorough decontamination

If there is strong clinical suspicion of acute OP/CB poisoning, treat patient immediately.

- Do not wait for laboratory confirmation.

Additional Resources:

- [Department of Pesticide Regulation \(DPR\) January 2024 Memo](#)
- [DPR Pocket Guide to Pesticides Found in Illegal Cannabis Grow Operations](#)
- [US EPA Recognition and Management of Pesticide Poisoning](#)



Pesticide Illness Reporting

Reporting Requirements for Clinicians

In California, physicians and other licensed health care professionals must report any known or suspected case of pesticide illness or injury to **the Local Health Officer (LHO) within 24 hours**. The **LHO must then notify** the County Agricultural Commissioner immediately, as well as notify the Department of Pesticide Regulation (DPR) and the Office of Environmental Health Hazard Assessment (OEHHHA).

There are four ways to report:



Call California Poison Control at **800-411-8080**.



Call the **Local Health Officer**.



File a **Confidential Morbidity Report** or **Pesticide Illness Report** with the LHO.



Submit report via **CalREDIE**.

With this method, Poison Control completes the report, which is sent directly to the LHO, DPR, and OEHHHA.

REMINDER

For work-related cases, also send the **Doctor's First Report** to the Department of Industrial Relations



From the Frontlines

Clinician awareness of pesticide-related illness reporting protocols: A survey of San Joaquin Valley healthcare providers' knowledge and experience

By Jared Cheatham, MD, Preventive Medicine Resident Physician at the University of California, San Francisco, MPH candidate at the University of California, Berkeley School of Public Health

Although the San Joaquin Valley (SJV) comprises only 17% of California's land area, it accounts for approximately 60% of the state's total pesticide use. In 2023, an estimated 104 million pounds of pesticides were used in SJV for production agriculture. Given this extensive use of pesticides, agricultural workers and residents of this region are at increased risk of exposure and of a potential subsequent pesticide-related illness. Unfortunately, there are challenges to understanding the full scope of pesticide exposure and pesticide-related illness in California and one reason is due to underreporting.



As mandatory reporters of suspected pesticide poisoning or any disease or condition caused by a pesticide, how knowledgeable and comfortable are clinicians with the specific reporting procedures? To assess provider awareness of reporting procedures, the Office of Environmental Health Hazard Assessment (OEHHA) designed and distributed an electronic survey to providers at a Federally Qualified Health Center (FQHC) system in the SJV. This center encompasses over 30 clinical sites that serve a patient population of over 180,000 individuals composed of nearly 50% agricultural workers and a majority of which are Hispanics.

In total, 9 % (27 out of 296) of clinicians within the FQHC health system responded to the questionnaire, mainly MDs, PAs and DOs with moderate (0-5 years) work experience, and working primarily in family and internal medicine.

Only 22% of respondents (6 out of 27) were aware that pesticide poisoning was a reportable condition and none of them indicated that they had treated and/or reported a case themselves.

Interestingly, when asked about what information, education, and/or tools they would need to recognize pesticide illness and report it, the following three topics appeared repeatedly:

- understanding symptoms and diagnosis of pesticide-related illness,
- knowledge of reporting requirements, and
- awareness of pesticide exposure among the patient population.



When asked about the way they wanted the information to be conveyed, respondents favored presentations and trainings during orientation.

Overall, this study points towards the continued need for more effective education and outreach to clinicians regarding recognizing and reporting pesticide-related illnesses. Raising awareness of pesticide-related illness among primary care providers will lead to a more thorough understanding of who is at risk of toxic pesticide exposure and inform strategies of prevention of future cases of pesticide-related illnesses.

For more information or to schedule an in-person or virtual training, contact OEHHA's Public Health Medical Officer:

Alanna.Bares@oehha.ca.gov

(916) 323-8808

Or check out OEHHA's online course on pesticide illness diagnosis, management, and reporting:

