



CARBOFURAN IN MARIJUANA GROW SITES IS A SIGNIFICANT OFFICER SAFETY HAZARD

Essential Points:

- Carbofuran is a pesticide that is extremely toxic to humans and other vertebrates, increasingly encountered in illegal marijuana grow sites within California.
- Officers entering marijuana grow sites must recognize evidence of Carbofuran usage and take precautions to avoid exposure.
- There are indications that illegal marijuana growers intentionally use Carbofuran at grow sites to discourage or delay eradication of their crops by law enforcement officers.
- Evidence of Carbofuran or other chemical use in marijuana grow sites should be carefully documented to support potential prosecution or penalty enhancement under applicable Federal and/or state laws.



This QúFURAN bottle was found at an illegal marijuana grow site in Tulare County, CA in 2018

and QúFURAN (manufactured in Mexico and the most commonly encountered brand in California's illegal marijuana grow sites). Carbofuran most often appears in marijuana grow sites as a viscous pink or purplish liquid which dries to a chalky white after application. Growers may use tank or backpack sprayers to apply to marijuana plants, or spread it on with a cloth or brush. Carbofuran may also rarely be encountered as small pellets or granules.³ Carbofuran is an effective systemic insecticide; therefore some growers mix it with irrigation water for delivery to their marijuana plants, turning their water drums, tanks, cisterns and impoundments into hazardous, toxic reservoirs.

A 2014 CVC HIDTA bulletin reported the safety hazards to officers posed by Carbofuran, a highly toxic carbamate pesticide in use by illegal marijuana growers. The use of Carbofuran at illegal marijuana grow sites continues to increase: during the 2018 California outdoor growing season, Carbofuran was detected at 17 of 20 eradicated grow sites (85%) tested by science teams, and veteran eradication team members report encountering more Carbofuran every year. Used by the growers to control pests and maliciously poison wildlife, the danger presented by Carbofuran to officers cannot be overstated: oral ingestion of as little as a ¼ teaspoon can be fatal to a 170 pound human.¹ Carbofuran is also toxic by inhalation, dermal absorption, and introduction via the eyes, mucous membranes, or open wounds. Each year, personnel involved in marijuana eradication are injured by exposure to Carbofuran. Most recently in August 2018, six members of a team eradicating a grow site on the El Dorado National Forest in California were sickened and required treatment at a hospital. Medical tests confirmed Carbofuran exposure.

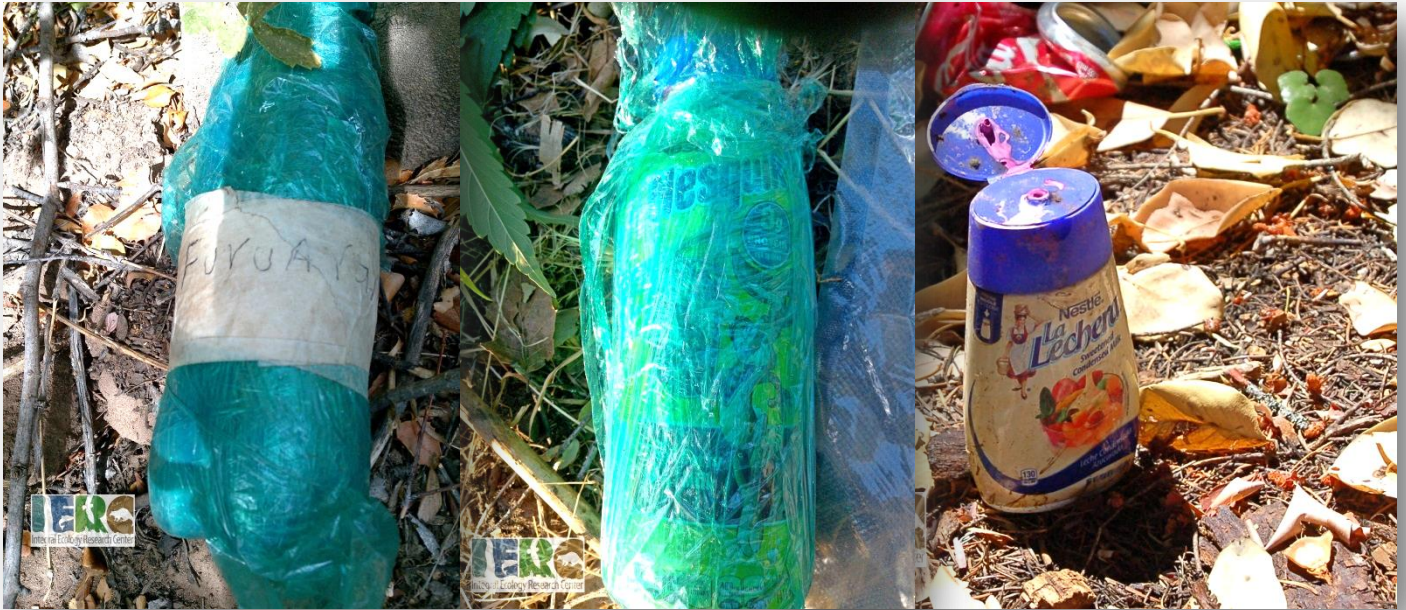
Carbofuran is a restricted use pesticide currently unapproved by the Environmental Protection Agency (EPA) for any applications in the United States.² Its many trade names include Furadan, Curater, Furacarb, Novadan

¹ "Carbofuran." EXTOTOXNET. June 1996. Accessed September 13, 2018. <http://pmep.cce.cornell.edu/profiles/extotoxnet/carbaryl-diclotophos/carbofuran-ext.html>.

² *Federal Register* 74, no. 51 (March 18, 2009): 11551-1553. Accessed September 18, 2018. <https://www.federalregister.gov/>.

³ "Carbofuran." EXTOTOXNET. June 1996. Accessed September 13, 2018. <http://extotoxnet.orst.edu/pips/carbofur.htm>.

The absence of branded pesticide containers in a grow site does not preclude the presence of Carbofuran: growers often repurpose beverage and other containers for mixing and storing the poison, and officers routinely find water and soda bottles containing Carbofuran or its residue.



These water and Nesquik bottles, repurposed to mix/store Carbofuran were found in an illegal marijuana grow site in Santa Barbara County, CA in 2018. Growers may have covered the bottles in green plastic to mark them as dangerous.

The pink liquid residue is a dead giveaway that this condensed milk bottle contains Carbofuran.

During the 2018 growing season, a suspect arrested in a Trinity County public land marijuana grow site strongly implied that illicit growers are increasing Carbofuran use in part to deter enforcement actions, and some have adopted the practice of leaving Carbofuran containers and other signs of use in plain view so teams will leave the sites without eradicating the plants.

Delaying eradication for up to 14 days should be considered if signs of active Carbofuran use are discovered in a marijuana grow site. Officers entering any marijuana cultivation site must be aware of the potential presence of Carbofuran or other hazardous chemicals and take precautions to minimize the chance of exposure:



A suspect at a 2018 Trinity County, CA illegal marijuana grow site stated he used this rag with a stick to mix Carbofuran into irrigation water for his marijuana plants.

- Wear long-sleeve shirts, long pants, hard-sided full leather boots, hat, eye protection, and chemical-resistant gloves; properly clean or replace these items between missions.
- Avoid contact with suspected chemicals and minimize physical contact with materials suspected to be contaminated.

- To reduce airborne contaminants, employ techniques causing the least disturbance to soil and plants when eradicating, e.g., using long-handled loppers instead of a machete to cut plants.
- A particulate-filtering face mask (N95) is recommended when eradicating or handling marijuana plants.
- Be aware of the symptoms of Carbofuran poisoning: weakness, headache, nausea, vomiting, abdominal cramps, diarrhea, tight chest, blurred vision, constricted pupils, and abnormal saliva flow. Seek immediate medical attention.

In May 2018, the U.S. Forest Service, Pacific Southwest Region issued *LE&I (Law Enforcement and Investigations) Marijuana Grow Site Chemical Safety Protocols, Revision 2.0* detailing exposure control/prevention, recommended protective equipment, emergency measures, and decontamination procedures. Law enforcement agencies engaged in marijuana eradication operations are encouraged to obtain this document and consider its recommendations.⁴

The use of Carbofuran and other chemicals in illegal marijuana cultivation sites, especially those located on public lands such as National Forests and National Parks may constitute violations of environmental law under various Federal and/or state statutes; or support the imposition of enhanced criminal and civil penalties. Accordingly, evidence of such use should be meticulously documented to support prosecution. Several jurisdictions in California have successfully prosecuted illegal marijuana growers for environmental crimes, and the U.S. Attorney for the Eastern District of California has identified the protection of public lands as a priority in marijuana crime prosecutions.



The well-circulated image from a 2016 Sierra County, CA marijuana grow site grimly illustrates the lethality of concentrated Carbofuran: the rabbit immediately perished after chewing the base of the marijuana plant, which is covered with the pesticide.

All photographic images courtesy of Dr. Mourad Gabriel and Dr. Greta Wengert, Integral Ecology Research Center (IERC), Blue Lake, CA.

⁴ U.S. Forest Service, Pacific Southwest Regional Office, 1323 Club Drive, Vallejo, CA 94592 (707) 562-8737.