

PESTICIDES

AND WATER QUALITY

Commonly used pesticides can be harmful to people and pets. They also pollute our water, air, and soil. While pesticides are used heavily in agriculture, **more than half of California pesticide use is in urban and suburban areas—in and around our homes, schools, and businesses.**

THREATS TO WILDLIFE AND WATER QUALITY

Commonly used pesticides have been detected in urban creeks and waterways throughout California and around the country. In our waters they poison birds, fish, and sensitive aquatic wildlife. In some locations, water contaminated with pesticides can migrate from creeks and surface waters into drinking water wells. We all need to do what we can to keep pesticides out of our creeks, streams, rivers, bays, and lakes.

Chlorpyrifos and **diazinon**, organophosphate pesticides, have been banned for residential use because they are so toxic to humans and the environment. These pesticides were either replaced or reformulated using other chemicals ("active ingredients"), that also cause water quality problems, including:

• Pyrethroids

Pyrethroids are long-lived, synthetic pesticides that interfere with the function of an organism's nervous system. They kill a wide variety of insect pests, including ants, cockroaches, and lawn grubs, but also earthworms and beneficial insects such as ladybugs and lacewings. When pyrethroids end up in our waters, they can kill crustaceans, aquatic insects, and fish.

Products containing pyrethroids have active ingredient names typically ending in "**-thrin**," including perm**thrin**, bifent**thrin**, cyfluthrin, beta-cyfluthrin, cyperm**thrin**, deltam**thrin**, lambda-cyhalo**thrin**, and tralom**thrin**. An exception is **esfenvalerate**.

CHECK THE PESTICIDE LABEL FOR ACTIVE INGREDIENTS

Pest Eliminator

Concentrate

PESTICIDE Kills Garden Pests

(thrips, whiteflies, weevils, and other pests)

Active Ingredients:

β-cyfluthrin..... 0.0015%

Imidacloprid..... 0.0120%

Other Ingredients..... 99.9865%

Total 100.0000%

Sample label



PYRETHRINS — DIFFERENT FROM PYRETHROIDS

Pyrethrins are short-lived pesticides made from pyrethrum chrysanthemum flowers. While they are toxic to birds, fish, and beneficial insects, they break down after a few hours in sunlight. **If you use a pesticide or insecticidal soap containing pyrethrin, use it on a dry day when you're not planning to water for the next few hours.** Prevent pyrethrins from running off to a street, gutter, or storm drain.



Choose eco-friendly products for your home and garden. Look for this symbol before you buy.

• Fipronil

This is another widely used pesticide for controlling ants, beetles, cockroaches, fleas, ticks, termites, mole crickets, thrips, rootworms, weevils, and other insects. Exposure to fipronil may lead to adverse human health impacts (California Department of Pesticide Regulation, 2023). It is also associated with bee colony collapse disorder. Fipronil is toxic to aquatic life, and to rabbits and ground-feeding birds such as chickens and turkeys.

• Imidacloprid



One of the most widely used pesticides in the world, imidacloprid is a neonicotinoid pesticide also linked to honey bee colony collapse disorder. In 2018, the outdoor use of imidacloprid and two other neonicotinoids were banned in the European Union, due to the high risk to bees.

• Malathion

Malathion is water-soluble — which means that rain and over-watering can easily cause it to run off lawns and gardens, into storm drains and on to local creeks, bays, and the ocean. Malathion is twice as toxic in salt water as in fresh water. It is also toxic to honey bees and other pollinators.

DISPOSING OF UNUSED PESTICIDES

In California, it's illegal to dispose of any amount of unused pesticide (or any hazardous waste) in the trash. Take unused pesticides to a local household hazardous waste collection facility or event. For a list of county household hazardous waste programs, visit www.calrecycle.ca.gov/HomeHazWaste/Directory/.

Never dispose of pesticide rinse water in any indoor or outdoor drain or in the gutter. Water used to rinse out a sprayer or applicator should be handled like the pesticide.



Beneficial insects are often far more sensitive to pesticides than the pests you might be trying to kill. Once pesticides eliminate the beneficial insects, pests multiply without a natural check.

MANAGING PESTS WHILE PROTECTING PEOPLE, PETS, AND THE ENVIRONMENT

1. Pesticides don't really solve pest problems. **Physical barriers** (window screens and caulking that keep pests out), **biological controls** (that attract beneficial insects), and **cultural controls** (keeping a clean house and a healthy garden that attracts beneficial insects) are a better solution than using pesticides. When it's necessary to use a pesticide, the best products for the environment are less toxic, break down quickly, and kill pests — not beneficial insects.
2. Follow the suggestions on pest prevention and less-toxic pest control in the *Our Water Our World* fact sheet series, online at www.ourwaterourworld.org and in participating stores.
3. Find detailed information on pests and integrated pest management (IPM) approaches at ipm.ucanr.edu.



WWW.OURWATEROURWORLD.ORG

Our Water Our World (OWOW) is an award-winning partnership between municipal agencies and garden centers and hardware stores that sell pest control products. Initiated in 1998, the program focuses on less-toxic, eco-friendly products and techniques as many common pesticides are harmful to sensitive species and ecosystems when they reach California surface waters.

Our Water Our World fact sheets and store displays educate residents about less-toxic pest management. Look for the **Eco-friendly** tag next to less-toxic products in participating stores and nurseries.



Our Water Our World is a program of the California Stormwater Quality Association® (CASQA), a 501(c)(3) non-profit organization that advances sustainable stormwater management protective of California water resources. CASQA is the registered service mark of the California Stormwater Quality Association®.

Pest control strategies and methods described in this publication are consistent with integrated pest management (IPM) concepts, and are based on scientific studies and tests in actual home and garden settings. Use suggested products according to label directions and dispose of unwanted or leftover pesticides at a household hazardous waste collection facility or event. For more information on pesticide disposal, visit www.earth911.com.

For more information, contact:

www.ourwaterourworld.org

University of California Cooperative Extension
Master Gardeners in your area
<https://mg.ucanr.edu/FindUs/>

University of California IPM
www.ipm.ucanr.edu

Scan to find out how you can protect water quality with eco-friendly pest control.

