

# 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**, deltamethrin, lambda-cyhalo**thrin**, and tralomethrin. An exception is **esfenvalerate**.

## 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%

Check the label for active ingredients.



### PYRETHRINS — DIFFERENT FROM PYRETHROIDS

Pyrethrins are short-lived pesticides made from pyrethrum chrysanthemum flowers. They are toxic to birds, fish, and beneficial insects until 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 insecticide for controlling ants, beetles, cockroaches, fleas, ticks, termites, mole crickets, thrips, rootworms, weevils, and other insects. It is 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 pesticide in the world, imidacloprid is a neonicotinoid pesticide also linked to honey bee colony collapse disorder. In January 2013, the European Food Safety Authority

stated that neonicotinoids pose an unacceptably high risk to bees. Many local garden centers have taken neonicotinoid pesticides off their shelves voluntarily because of the current honey bee crisis.

## • Malathion and Carbaryl (Sevin)

These pesticides are water-soluble—which means that rain and over-watering can easily cause them to run off lawns and gardens, into storm drains and on to local creeks, bays, and the ocean. They are twice as toxic in salt water as in fresh water. Both are toxic to honey bees and other pollinators.

## DISPOSING OF EXTRA PESTICIDES

In California, it's illegal to dispose of any amount of unused pesticide (or any hazardous waste) in the trash, in spite of what the label may say. Take pesticides you won't be using 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/](http://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 applied 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. When you apply pesticides, you're treating the symptom, rather than the cause of pest problems. **Physical barriers** (window screens and caulking to keep pests out), **biological controls** (encouraging beneficial insects), and **cultural controls** (keeping a clean house and a healthy garden that attracts beneficial insects) are always preferable to pesticide use. In situations where a pesticide is necessary, the best products for the environment are less toxic, less persistent, and target 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/FactSheets.aspx](http://www.ourwaterourworld.org/FactSheets.aspx) and in participating stores.
3. Find detailed information on pests and integrated pest management (IPM) approaches at [ucipm.ucdavis.edu](http://ucipm.ucdavis.edu).



Bee photo: Paul Stein, licensed under the Creative Commons Attribution-Share Alike 2.0 Generic license; Storm drain photo: SCVURPPP

[WWW.OURWATEROURWORLD.ORG](http://WWW.OURWATEROURWORLD.ORG)

Common home and garden pesticides are found in stormwater runoff, treated wastewater, and in local waterways, sometimes at levels that can harm sensitive aquatic life. **Our Water Our World** is a joint effort by water pollution prevention agencies, participating retail stores, and pesticide distributors and manufacturers—working together to reduce the risks associated with pesticide use.

**Our Water Our World** fact sheets and store displays educate residents about less-toxic pest management. For the rest of the series of fact sheets, visit [www.OurWaterOurWorld.org](http://www.OurWaterOurWorld.org). Look for the **Less Toxic • Eco-friendly** tag next to less-toxic products in participating stores and nurseries.

Pest control strategies and methods described in **Our Water Our World** fact sheets are consistent with integrated pest management (IPM) concepts, and are based on scientific studies and tests in home and garden settings.

For more information, contact:

Bio-Integral Resource Center (BIRC), 510.524.2567, [www.birc.org](http://www.birc.org)

University of California Cooperative Extension Master Gardeners in your area

University of California IPM website, [www.ipm.ucdavis.edu](http://www.ipm.ucdavis.edu)

