



TOXIC FREE Homes

INDOOR PEST CONTROL

Pesticides are designed for one purpose: to kill. Both the active agents of most pesticide products and the solvents in which they are dissolved pose health hazards to you and your pets. The use of pesticides indoors is particularly risky. People often use pesticidal products without regard for the proper amount, timing, or safety precautions. Ventilation in many homes is relatively poor and people spend many hours a day at home. The very young, old, sick and chemically sensitive individuals alike are exposed to the pollutants present in their homes, not just healthy adults. You can control pests in your home and protect your family.

Use the Toxic Free Homes approach to indoor pest control:

1. Use preventative methods first.
2. Monitor your pest populations to learn the normal levels present and to discover when they are becoming a problem.
3. When preventative methods are not providing enough control, use the least toxic control methods.

Prevention

Cockroaches, ants, weevils, mice, flies and other common household pests all have three things in common: they need food, water, and a place to call home. To keep them out of your home:

- ◆ **Eliminate food sources** by storing food in the refrigerator or in tight-fitting containers. Don't leave dirty dishes out overnight. If pet food is left out, place the dish in a pan of soapy water. Use garbage cans with tight-fitting lids. Freeze cereals and flours to eliminate food pests.
- ◆ **Eliminate water sources** by fixing all leaking sinks, faucets, and pipes.
- ◆ **Eliminate hiding places.** Caulk cracks and plug holes where cockroaches hide. A

good silicone caulk is the longest lasting. Duct tape can be used for a quick fix. Clean out all food and paper storage areas regularly.

- ◆ **Don't let them into your home.** Keep screens on doors and windows in good repair. Control ants outside by spraying their nests with insecticidal soap. Prune back branches that are providing them with a bridge into the house.

Monitoring

- ◆ Look in drawers, books and under the kitchen sink for pests or their droppings.
- ◆ Use nontoxic roach traps to monitor the levels of cockroaches living in your house. Several are on the market now that contain only an insect-attractant chemical and an adhesive.

ENVIRONMENTAL HEALTH COALITION

1717 Kettner Blvd, Suite 100 / San Diego, CA 92101 / Telephone: 619-235-0281 / Fax: 619-232-3670
e-mail: ehc@environmentalhealth.org internet: www.environmentalhealth.org



TOXIC FREE *Homes*

PROTECT YOUR CHILDREN

The growing bodies of children are very susceptible to toxic chemicals. Avoid using pesticides if children live in your home. Head lice and scabies are common in young children. Do not use shampoos that contain lindane and never use pesticides intended for other uses, such as roach and ant sprays. Lice infestations can be eliminated by ordinary shampoos, a good lice comb, and thorough cleaning of clothing, bed linens and grooming items that have come into contact with an infected person. Scabies should be diagnosed by qualified medical personnel and the least toxic miticide used. Contact EHC at (619) 235-0281 for more information.

LEAST TOXIC CONTROL

Diatomaceous earth (look for the garden grade, not the pool grade) is a dehydrating powder that kill insects on contact, and is especially effective against ants. Sprinkle it in carpets or around doors and windows. Avoid inhaling the dust. Some common brand names: Diatom Dust, Concern, Grow More.

Nontoxic Traps are available to catch cockroaches, flies and wasps, and mice and other rodents. Avoid "look alike" roach traps and pest strips that contain toxic pesticides.

Boric acid is excellent for control of cockroaches. It is a moderately toxic, noncorrosive powder found in many commercial brands (look for 99% boric acid) carried in hardware stores and garden centers. Sprinkle it in cracks and crevices and behind furniture. IT IS TOXIC BY MOUTH: do not put it where children and pets can get to it.

Baits are a less-toxic control method that is especially useful for ants, where the goal is to kill the queen and other ants in the nest, not just the ants that reach the bait. Control is not immediate but in the long run is more effective than killing the visible ants. Commercial baits are available that contain only boric acid or borax as the active ingredient (some brand names: Drax, Terro-Ant Killer). You may also make your own bait with a very small amount of boric acid in sugar water (about 1%, or approximately 1 teaspoon boric acid to 1 pint of water) - be sure to put the bait in a sealed jar with holes in the lid, or in a location where children and pets cannot find it.

FLEAS:

Effective control of fleas requires an organized plan with attention to fleas in the rugs or carpets, on the animal, and in the yard.

Prevention:

House: Vacuum often to remove fleas and flea eggs. Dispose of the vacuum cleaner bag at frequent intervals or freeze it overnight after carefully wrapping in a plastic bag to kill flea eggs and larvae. Steam cleaning should be considered if there is already a severe infestation.

Pets: Healthy animals are less likely to be attacked. Good nutrition and good grooming help maintain healthy skin and fur. Herbal dips and herbal flea collars are somewhat effective in repelling fleas. Discontinue use if you notice skin irritation or an allergic reaction.

Monitoring:

Pets: Use a good flea comb to remove fleas on your pet; flick the fleas into a dish of soapy water to drown them. Frequent combing may keep fleas under control.

Least Toxic Chemical Controls:

House: If you need quick relief and can tolerate pyrethrins, products with these moderately toxic active ingredients can be used in a one-time application for instant "knock down." (see next page for more)

Pets: In recent years, new products are available over the counter or from a veterinarian for use directly on pets. Available information from published studies (see End Notes) and from our personal experience, indicates that these are effective and tolerated well by the pets. None of them is completely non-toxic - as with all medicines, KEEP THEM AWAY FROM CHILDREN.

Particular care is advisable with the topical products, which are designed to move quickly from the animal's skin into the bloodstream. Do not get them on YOUR skin.

Yard: An insecticidal soap product can be used outdoors to control fleas. During flea season (especially late summer and fall) keep the yard very dry. This will discourage flea growth in your yard.

Advantage (Bayer) contains imidacloprid, a synthetic nicotine with lower toxicity to mammals than nicotine itself. EHC found no reports of adverse health effects to humans or pet from imidacloprid products. Available over the counter, applied topically.

Program (lufenuron, Novartis) is another new product, in a pill form, that contains a chitin inhibitor (insects' external skeletons are made of chitin). Adverse effects in dogs and cats from lufenuron have been reported in two studies. Available by prescription only.

Frontline Top Spot (fipronil, Merial/Merck) is an over-the-counter, topically applied liquid. EHC found no reports of adverse health effects to humans or animals.

Revolution (selamectin, Pfizer) is a topically applied product, available by prescription only. Product information at the Pfizer website indicates side effects occurred in about 0.5% of the cats and dogs tested.

GARDEN PEST CONTROL

Most garden pests and weeds can be controlled without the use of strong chemical pesticide products. Safer products and techniques can keep your pest populations to manageable levels without exposing your family and pets to toxic chemical sprays, dusts, or residues.

The Common Sense Approach:

Alternative pest control is based on a common sense approach. Prevent insect, weed, and fungus problems from developing by maintaining a healthy garden of well-adapted plant varieties. Four easy steps in the common sense approach are:

1. Maintain your garden through proper watering and fertilization, periodic pruning and weeding, and by clearing away debris.
2. Monitor pest populations by getting to know the bugs that damage your garden as well as the beneficial insects that keep a good balance.
3. Utilize nontoxic control methods first when pests do become a problem, e.g., handpicking, a strong water jet, barriers, and traps.
4. Use the least toxic chemical available when all other methods fail and confine the treatment to the affected area only.

LEAST TOXIC INSECT & WEED CONTROL FOR YOUR GARDEN		
METHOD	EXAMPLES	PESTS
<p>MECHANICAL: Adhesive products Full-force water spray Handpicking</p> <p>Mulching Live bee colony removal Traps Shallow pan of stale beer or yeast/water</p>	<p>Sticky barriers, whitefly traps</p> <p>Remove weeds before they flower Remove leaves or smaller plants infested with white fly weeds Be certain mulch doesn't contain seeds See Bee Keepers in the yellow pages</p>	<p>ants, crawling insects, whiteflies aphids, mites, earwigs, whiteflies cabbage loopers, cutworm,</p> <p>annual weeds bee colonies gophers snails, slugs</p>
<p>BIOLOGICAL: Product with insect pathogens</p> <p>Insect predators</p> <p>Snail predators</p>	<p>Bacillus thuringiensis (B.t.)</p> <p>lacewings ladybugs</p> <p>predatory mites</p>	<p>leaf-eating caterpillars and "worms" corn earworms, aphids, mealybugs, mites, scales, insect eggs, larvae, spider mites common brown snail Rumina decollata</p>
<p>CHEMICAL: Inorganic dusts</p> <p>Oil spray</p> <p>Soap and water solutions</p> <p>Antitranspirant products</p> <p>For severe infestations: Pyrethrin insecticides</p>	<p>Diatomaceous earth Sulfur dust Oil without copper additive</p> <p>Make your own: 5 Tablespoons soap to 1 gallon water in a spray bottle Some brand names: Cloud Cover, Wilt Pruf</p> <p>Water based or powder formulations</p>	<p>most insects and snails fungi, mites scale, mealybugs, whiteflies, red spider mites aphids, mites, whiteflies, weeds</p> <p>prevent mildew on roses</p> <p>most insects</p>

TERMITES:

Termite exterminators currently rely on Vikane (sulfuryl fluoride) for whole house fumigation and Dursban (chlorpyrifos) for spot treatment. Both are toxic to the nervous system. Very young, old, ill, and chemically sensitive people are at special risk. The extent and toxicity of residues are unclear. The warranty for Vikane treatment is generally only 2 years, the same as for alternative treatments.

Several options are available for nontoxic or less toxic control of termites. Alternatives include removal or repair of infested wood; whole house heat; microwaves; cold treatment; spot treatment with electricity; boron compounds; fungal pathogens; and limonene or other citrus derivatives. See our Toxic Free Homes Termite Control fact sheet for more information on these options and on prevention of termite infestations. Call EHC or see our web site for a copy.

Pyrethrins and synthetic derivatives called pyrethroids have low-to-moderate toxicity for humans and other mammals and are now a widely used alternative to organophosphates. However, they are known to provoke serious asthma and allergy attacks in susceptible people. Also pyrethrin products usually contain piperonyl butoxide, an additive whose safety has been brought into question by recent studies that showed liver cancer in both mice and rats exposed to the substance

Resources & Endnotes

Resources: Check out local hardware stores and nurseries for garden grade diatomaceous earth and other less toxic pest control products. Call EHC for an up-to-date list of companies offering less toxic termite control and sources of other products referred to in this fact sheet.

Bio-Integral Resource Center (BIRC): P.O. Box 7414, Berkeley, CA 94707 (510) 524-2567:

Current, thoroughly researched, pest-specific information on least-toxic pest management, available in publications and over the phone.

End Notes: Arther, RG, Cunningham, J, Dorn, H, Everett, R, Herr, LG, and Hopkins, T. , 1997. "Efficacy of Imidacloprid for Removal and Control of Fleas." American Journal of Veterinary Research, Vol. 58, number 8, pp. 848-850.

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Franc, M, and Cadiergues, MC, 1998. "Antifeeding Effect of Several Insecticidal Formulations Against Ctenocephalides felis [fleas] on Cats." Parasite, Vol. 5, number 1, pp. 83-86. Northwest Coalition For Alternatives to Pesticides, 1997. "Managing Fleas Without Poisons." Alternatives, Vol. 17, number 3, pp. 15-21.

Please note that although certain products are mentioned by brand name, EHC does not endorse any brand name products or services.

Environmental Health Coalition

WHO WE ARE AND WHAT WE WANT

Environmental Health Coalition is one of the oldest and most effective grassroots organizations in the United States, using social change strategies to achieve environmental justice. Founded in 1980, EHC is dedicated to the prevention and cleanup of toxic pollution threatening our health, our communities, and the environment.

We promote environmental justice, monitor government and industry actions that cause pollution, educate communities about toxic hazards and toxics use reduction, and empower the public to join our cause.

We at EHC see preventing pollution as good common sense. Toxics cause health and safety problems in every situation where they are used - manufacturing, transportation, incorporation into a product, use of the product, and final disposal.

The best solution to the problem of toxic pollution is preventing the pollution in the first place. Eliminating a toxic material eliminates its problems at every stage. This is one in a series of Toxic Free Homes fact sheets produced by Environmental Health Coalition to help you reduce your use and disposal of hazardous and toxic materials. Other fact sheets in the series include our Household Cleaners fact sheet, our Less-Toxic Termite Control Fact Sheet, and our Environmental Illness Resources fact sheet. All are available by calling EHC at (619) 235-0281. They may also be downloaded from our website: www.environmentalhealth.org. Look for the fact sheets in the Community Assistance pages.

ENVIRONMENTAL HEALTH COALITION'S OTHER CAMPAIGNS

TO ACHIEVE TOXIC-FREE COMMUNITIES THROUGHOUT THE SAN DIEGO-TIJUANA REGION INCLUDE:

Border Environmental Justice Campaign - works in solidarity with social justice groups in the border region to promote worker and community right-to-know and to demand the cleanup of contaminated sites.

Clean Bay Campaign - fights pollution in San Diego Bay from military, industrial, and residential sources.

Toxic Free Neighborhoods Campaign - organizes to reduce military and industrial pollution in San Diego's low-income communities of color.

Join Environmental Health Coalition, San Diego's most effective environmental justice organization. For information about membership, our other Toxic-Free Homes fact sheets, and our other campaigns, contact EHC at the address on the front.