

YOU HAVE MANY CHOICES!

When bugs, weeds, or other pests become a problem, try one of these less-toxic control methods. Many hardware stores and garden centers are carrying an increasing selection of healthier pest control products. Take this list with you on your next visit and ask which products are available.

PHYSICAL METHODS

- Pluck, wash, or vacuum bugs off plants or surfaces.
- Pull weeds the old-fashioned way, ideally before they produce seeds.
- Use row covers to block insects.
- Use mulch to prevent weeds.
- Encircle beds with copper flashing to deter snails and slugs.

HEAT & NONTOXIC SUBSTANCES

- Apply corn gluten meal to turf grass in early spring and fall to prevent germination of dandelions, crabgrass, and other common weeds.
- Kill weeds in driveway cracks with boiling water or a propane torch.
- Sprinkle natural-grade diatomaceous earth in pest hiding places and entry points.

TRAPS, VISUAL LURES, NONTOXIC BAITS

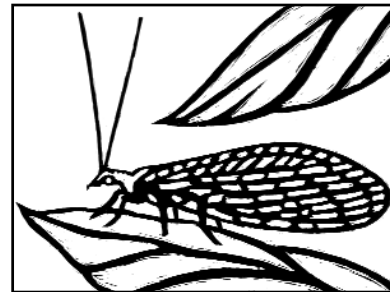
- Trap aphids and whiteflies with yellow sticky cards; they are attracted by the color.
- Bait slugs with a beer or yeast solution in a saucer placed flush with the soil surface.
- Lure yellowjackets into narrow-necked bottles or jugs containing apple juice.

HORTICULTURAL OIL SPRAYS

- Use to control aphids, mites, scale insects, whiteflies, and other pests.
- Try vegetable-oil (as opposed to petroleum-oil) based sprays.
- Apply summer or foliar oils when foliage is present.

BIOLOGICAL CONTROL

- Learn your local allies. Lady beetles devour aphids; green lacewing larvae feed more generally on soft-bodied insects, mites, and insect eggs. Other allies include spiders, soldier bugs, predatory mites, various nematodes. (see also microbial pesticides)
- Support the allies you have. Provide the food, water, and shelter they need.



INSECTICIDAL SOAPS

- Use most effectively against soft-bodied pests — aphids, mites, whiteflies, thrips, caterpillars, etc.

MICROBIAL PESTICIDES

- Realize that different strains of the bacterium, *Bacillus thuringiensis* or *Bt*, target different pests. *Bt israelensis* is effective against mosquito and black fly larvae. *Bt kurstaki* is toxic to most caterpillars — cabbage worms, tomato hornworms, tent caterpillars, etc., BUT ALSO TO BENEFICIAL SPECIES.
- Use milky spore disease to control Japanese beetle grubs.
- Ask about the availability of other microbial pesticides. Numerous bacteria, fungi, viruses, and protozoa are effective pest control agents.

BOTANICAL INSECTICIDES

- Be aware that although many naturally occurring plant extracts and compounds have insecticidal properties and tend to degrade rapidly in the environment, they vary greatly in their toxicity to humans as well as non-target organisms. Many are broad spectrum. USE CAREFULLY!
- Try neem to control cutworms, mites, nematodes, and other pests.
- Use sabadilla as an effective control for true bugs such as squash and harlequin bugs. BEWARE — IT IS ALSO VERY TOXIC TO HONEYBEES.



For further information on use and availability, visit the *Audubon At Home* “You Have A Choice!” web page: www.audubon.org/bird/at_home/alternatives.html

BE COUNTED!

If you switch to healthier choices in pest control, please let us know — email us: audubonathome@audubon.org

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birds.fws.gov/Education.htm
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HEALTHIER CHOICES

The
Audubon At Home
Guide to Healthier
Pest Control



HEALTHIER YARDS....
HEALTHIER NEIGHBORHOODS...

HEALTHIER HABITATS!

Our health and well-being, and that of the plants and wildlife with which we share the environment, depend on having a clean, healthy, sustainable place to live — a healthy habitat!

The loss, fragmentation, and degradation of habitat is the leading cause of population decline in birds and other wildlife. Our backyard habitats are becoming critically important pieces holding together an increasingly fragmented landscape. In every community, there is the potential to make our backyards and neighborhoods healthier places — for ourselves, and for the birds, butterflies, and other wildlife that are increasingly dependent on them.

Simple conservation actions, such as reducing our use of pesticides, can achieve measurable improvements in habitat quality and environmental health. Home, lawn, and garden pesticide use is rampant. Far too often, we use toxic pesticides when they are not necessary, and because we are not aware of healthier alternatives.

WE CAN MAKE HEALTHIER CHOICES!

3 SIMPLE STEPS FOR HEALTHIER PEST CONTROL

1 PRACTICE PREVENTION

Pests, whether bugs, weeds, or other undesired organisms, are usually the symptom of a problem rather than the source — prevent problems that can lead to pest infestations.

- Remove potential pest hiding and breeding sites. Keep outdoor areas clear of trash and standing water. Keep indoor areas clean and dry.
- Keep your plants and soil healthy. Healthy plants can better resist, and recover from, pest damage. Plant native flowers, trees, shrubs, and grasses to take advantage of their ability to thrive in your area.
- Make natural pest enemies welcome. Toads, dragonflies, lady beetles, bats, and numerous other species are natural allies in pest control. Learn your allies and support them.
- Mow a little higher — a longer, thicker lawn will crowd out weeds.



2 MAKE SURE YOU HAVE A PROBLEM

Seeing a bug or weed doesn't mean you have a "pest problem."

- Take the time to identify your "pest." Is it a beneficial or non-pest species?
- Reconsider what's a weed. Tolerate some plants other than grass. Allow naturally occurring plants to fill in problem spots. There are many low-growing wildflowers that can tolerate mowing and will add some diversity to your lawn area. Create a "mowed meadow."

- Pest control does not mean pest elimination. Realize that insects can live in your lawn and garden, and not cause damage. The mere presence of a potential pest species does not mean you have a problem. It must be abundant enough to cause damage. Is it?



3 USE LESS-TOXIC PEST CONTROL CHOICES

Despite the prevalence of synthetic pesticides on the shelves of hardware stores and gardening centers, you have many other options for pest control that pose little or much less toxic risk — even no risk at all. In addition to being healthier, many less-toxic options are also less expensive.

SEE REVERSE TO LEARN MORE ABOUT YOUR MANY CHOICES!



DID YOU KNOW...?

- Pesticides include herbicides (for weed control), insecticides (for insect control), fungicides (fungus control), rodenticides (rodent control), and a wide range of other substances used to kill or control other undesired organisms.
- Homeowners apply an estimated 66 million pounds of herbicides and insecticides ALONE per year to their homes, lawns, and gardens. This does NOT include applications made by pest control or lawn care professionals.
- Lawn pesticides cause the deaths of an estimated 7 million birds per year.
- Homeowners are using 50% more herbicides than they did 20 years ago.
- Commonly used pesticides are routinely found in surface and ground water throughout the country.
- In a recent study of pesticide exposure among children living in a major U.S. metropolitan area, traces of garden chemicals were found in 99% of the 110 children tested. Concentrations were significantly higher in children whose parents reported that they used pesticides in their gardens.