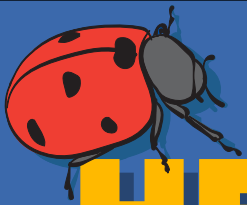


## GROWING A

## HEALTHY GARDEN

## TO MANAGE PESTS NATURALLY



**A** healthy garden filled with a wide variety of flowering plants will be more resistant to significant pest damage. A healthy, diverse garden will also attract beneficial creatures, such as dragonflies, ladybugs, lacewings, syrphid flies, and “miniwasps,” which feed on pests.

### ATTRACTING AND KEEPING BENEFICIAL INSECTS

- Become familiar with what beneficial insects look like in their various forms of development. Many people kill ladybugs in their larval form without realizing it. Other bugs suffer the same fate. Go to [www.ipm.ucdavis.edu/PMG/NE/index.html](http://www.ipm.ucdavis.edu/PMG/NE/index.html) to see what these garden predators look like as “babies” and adults!
- **Reduce or eliminate the use of broad-spectrum pesticides in your garden.** Bees and other 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 are free to multiply without a natural check. As pest populations rise, you

may be tempted to spray more frequently, but pesticides leave genetically resistant strains of pests to breed, creating an increasingly resistant pest population. The harder it becomes to kill the pest, the more you’ll need to spray and the fewer natural enemies you’ll have to help you out.

- **Provide food and water for the adult forms of beneficial insects.** Although many beneficial insects perform their pest control services only during an immature stage, the adult stage feeds on nectar and pollen. You can attract and keep a wide variety of beneficial insects in your garden by including flowering plants that are rich in pollen and nectar. The box on the back page lists a number of these “insectary” plants. Some adult beneficial insects also need water from dew, irrigation, or other sources to sustain them during dry periods.

### CHOOSING THE RIGHT PLANT

One of the most important preventive steps in the pest management process is selecting appropriate plants for a particular location. Usually we choose plants for their beauty, but to minimize pest problems, consider other plant characteristics and the site where it will grow. It’s easier to plant a compatible species for your site than to try to alter the growing conditions.

- Understand the soil conditions in your yard. Soil conditions must match the requirements of your plants. For example, some plants are well adapted to salty or compacted soil or soil with poor drainage.
- Know the sun and shade characteristics of your garden. Consider times of day and different seasons.
- Know that watering requirements differ depending upon the soil and plant type.
- Select pest- and disease-resistant plants.
- Don’t plant invasive species (some are available as garden plants), and remove those growing on your property (see “Don’t Plant a Pest!” brochure from Cal-IPC; [www.cal-ipc.org](http://www.cal-ipc.org)).
- Plant a diversity of species. Include native plants and plants from other Mediterranean climates. This ensures that a single pest problem will not devastate your entire landscape.
- To attract and keep beneficial insects, include “insectary” plants in your landscape (see box on back).
- You can get help in choosing the right plants from California Certified Nursery Professionals, University of California Cooperative Extension Master Gardeners, Horticultural Consultants, ISA Certified Arborists (see the Yellow Pages index), California Invasive Plant Council, or local gardening clubs. Also, see the books recommended on the back side of this fact sheet.



Choose less toxic products for your home and garden. Look for this symbol before you buy.

## PLANTING AND CARING FOR YOUR PLANTS

Start your plants out right by choosing healthy specimens and planting them properly. Keep your plants healthy by correctly watering, pruning, and fertilizing them (if needed).

- Before you buy a plant, ask to examine the roots. Do not buy plants with roots that are kinked or circling the container. Also check the “root crown,” the region where the roots meet the stem or trunk. Don’t buy the plant if that area is soft, rotten, or deformed.
- Don’t pile soil around the plant any higher than the root crown. Don’t plant in a depression that will allow water to wash soil down around the stem or trunk and cover the root crown. A continually moist root crown can cause rot.
- Since a young plant doesn’t have an extensive root system, it can dry out quickly. Water thoroughly and keep the soil moist, but don’t drown the plant.
- Cover bare soil with mulch. Mulch conserves soil moisture so plants don’t dry out as quickly. A four-inch layer of mulch will prevent most annual weeds from growing, and any weeds that do sprout can be pulled out more easily.
- Use a mulch of leaves, bark, or composted manure and/or garden waste to provide organic matter to the soil and a slow, steady flow of nutrients to plants.
- Use slow-release chemical fertilizers only if soil testing indicates a specific deficiency.

- Different plants require different kinds of pruning (if they need it at all). Learn how and when to prune your plants, and do so judiciously. Severe pruning can damage the plant and encourage pests and diseases.

### INSECTARY PLANTS

The flowers on these and many other plants have nectar and pollen that are accessible to beneficial insects.

Aster (*Aster*)  
Baby blue eyes (*Nemophila menziesii*)  
Calendula (*Calendula*)  
Calif. lilac (*Ceanothus*)  
Calif. poppy (*Eschscholzia californica*)  
Chervil (*Anthriscus cerefolium*)  
Chrysanthemum (*Chrysanthemum*)  
Coriander (*Coriander sativum*)  
Cosmos (*Cosmos*)  
Coyote brush (*Baccharis pilularis*)  
Dill (*Anethum graveolens*)  
Elderberry (*Sambucus mexicana*)  
Fleabane (*Erigeron*)  
Holly-leaved cherry (*Prunus ilicifolia*)  
Monkey flower (*Mimulus*)  
Native buckwheat (*Eriogonum*)  
Pincushion flower (*Scabiosa*)  
Rosemary (*Rosmarinus officinalis*)  
Rudbeckia (*Rudbeckia*)  
Sunflower (*Helianthus*)  
Sweet alyssum\* (*Lobularia maritima*)  
Tidy-tips (*Layia platyglossa*)  
Toyon (*Heteromeles arbutifolia*)  
Yarrow (*Achillea*)  
Zinnia (*Zinnia*)

\*Do not plant on or near coastal bluffs.  
Can be invasive.

## PESTICIDES AND WATER POLLUTION

Common household pesticides show up in treated wastewater and in local waterways, sometimes at levels that can harm sensitive aquatic life. So, water pollution prevention agencies have teamed up with participating retail stores, pesticide distributors, and manufacturers to reduce the risks associated with pesticide use. This fact sheet is part of a series of fact sheets and store displays aimed at educating residents about less-toxic pest management. For the rest of the series of fact sheets, visit [www.ourwaterourworld.org](http://www.ourwaterourworld.org). Also, look for the “Our Water Our World” logo next to products in participating stores and nurseries. See the Pesticides and Water Pollution fact sheet for information on active ingredients in common pesticides that may cause water quality problems.

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, call 1-800-CLEANUP or visit: [www.1800CLEANUP.org](http://www.1800CLEANUP.org). No endorsement of specific brand name products is intended, nor is criticism implied of similar products that are not mentioned.

### ACKNOWLEDGMENT

The Central Contra Costa Sanitary District originally developed this IPM outreach program.

### FOR MORE INFORMATION

For more information, contact:

**Common Ground Organic Garden Supply and Education Center**  
(650) 493-6072;  
[www.commongroundinpalto.org](http://www.commongroundinpalto.org)

**California Invasive Plant Council (Cal-IPC)**  
[www.cal-ipc.org](http://www.cal-ipc.org)

**California Native Plant Society**  
[www.cnps.org](http://www.cnps.org)

**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 (in the phone book)

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

## RECOMMENDED READING

- *The Best of Fine Gardening: Healthy Soil* by the editors of *Fine Gardening* magazine, published 1995 by Taunton Press, Newtown, CT; (800) 888-8286.
- *California Master Gardeners' Handbook* published 2002 by the University of California Division of Agriculture and Natural Resources, Berkeley, CA.
- *Natural Enemies Handbook* by Mary Louise Flint and Steve H. Dreistadt, published 1998 by University of California Division of Agriculture and Natural Resources, Berkeley, CA.
- *Sunset Western Garden Book*, Sunset Publishing, 2001.

