

Gardening with Good Bugs

Most gardens contain far more types of good bugs, or beneficial insects, than pest insects. Beneficial insects and other organisms that kill pest insects are called natural enemies. In any pest management or plant care program, it is important to encourage these natural enemies by avoiding pesticides that kill them. You can also encourage beneficial insects by choosing plants that provide them with pollen, nectar, and shelter and keeping ants out of pest-infested plants. Learn to identify good bugs, both in their adult forms and immature (larval) stages.

Common good bugs found in California gardens include:

- ◆ **Lady beetles:** Both adults and larvae consume aphids.
- ◆ **Lacewings:** Lacewing larvae feed on many insect pests; adults are often seen around lights.
- ◆ **Syrphid flies:** Syrphid fly larvae consume aphids; adults hover around flowers.
- ◆ **Parasitic mini-wasps:** Many species of tiny wasps lay their eggs in pests like aphids or caterpillars; their hatching larvae consume the pest and kill it.
- ◆ **Spiders:** All spiders feed on insects or other arthropods and are beneficial in the garden.

(See reverse for drawings of good bugs mentioned above.)

What is Integrated Pest Management?

Integrated pest management (IPM) uses environmentally sound, yet effective, ways to keep pests from annoying you or damaging plants. IPM programs usually combine several pest control methods for long-term prevention and management of pest problems without harming you, your family, or the environment — IPM also reduces pollution in California waterways. Successful IPM begins with correct identification of the pest. Only then can selection of the appropriate IPM methods and materials be made.



Preferred IPM methods include:

- ◆ Planting pest-resistant or well-adapted plant varieties like native plants.
- ◆ Discouraging pests by modifying the way you design, irrigate, fertilize, and manage your garden.
- ◆ Altering the garden or home environment to deprive pests of the food, water, shelter or other requirements they need to thrive.
- ◆ Keeping pests out of the home and garden using barriers, screens, and caulking
- ◆ Squashing, trapping, washing off or pruning out pests.
- ◆ Relying on good bugs in your garden to eat pests, thereby eliminating the need for insecticides that may end up in our waterways.

Turning to pesticides:

- ◆ Only use pesticides when non-chemical controls are ineffective and pests are reaching intolerable levels.
- ◆ Use pesticides in combination with the methods described above.
- ◆ Choose pesticides carefully so that the least toxic, most effective material is used to protect human health and the environment.

parasitic
mini-wasp
killing aphid



yellow sac
spider



lacewing



lady beetle



syrphid fly

—PROTECT YOUR WATER—

To eliminate runoff to storm drains and protect our creeks, rivers and the ocean, minimize the use of pesticides and follow proper use and disposal practices. Whenever possible, use non-chemical alternatives or less toxic pesticide products.

For more information, contact the **University of California Cooperative Extension Master Gardeners of Orange County** Hotline: (714) 708-1646 or ucmastergardeners@yahoo.com or visit www.uccemg.com and www.ipm.ucdavis.edu.



What you use in your garden affects our creeks, lakes, and rivers!