Meet the Beneficials: Natural Enemies of Garden Pests

Predators hunt, attack, and kill their prey. Encourage these natural enemies by avoiding pesticides that kill them; choosing plants that provide them pollen, nectar, and shelter; and keeping ants out of pest infested plants. Common predators that eat garden pests are pictured below.

- Convergent lady beetles prefer to eat aphids but sometimes eat whiteflies and other soft-bodied insects. Shown here are the adult (left), larva (center), and cluster of eggs (right).
- Green lacewing adults eat nectar and pollen. Some species also eat insects.
- Green lacewing larvae feed on mites, eggs, and small insects, especially aphids.
- Predaceous ground beetle adults stalk soil-dwelling insects such as earthworms and root maggots.
- Predaceous ground beetle larvae live on soil and in litter; feeding on almost any invertebrate.
- Assassin bugs attack almost any insect.
- Pirate bugs attack mites and any tiny insect, especially thrips.
- Damsel bugs are predacious on a wide variety of small insects.
- Soldier beetle adults eat mostly aphids; their larvae are soil-dwelling.
- Spiders, including this crab spider, attack all types of insects.

Parasites live and feed on or on a larger animal (host). Nearly all insect pests have at least one parasite that attacks them. Insects that parasitize other invertebrates (sometimes called parasitoids) are parasitic only in their immature stages and kill their host just as they reach maturity. Most insect parasites are host-specific wasps or flies, and many are so small that often you won't see them. An adult parasite can lay eggs in hundreds of host individuals with a resulting quick reduction in pest numbers.

- Some parasites attack insect eggs, such as the Tachinid species walk.
- The blackish scale insects have a uniquely3-shaped body that makes them difficult to see. They are often found on leaves, stems, and other parts of plants.
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- Paralyzed aphids die and turn into crumby "nymphs" that can be black or beige. The hole in the nympha at left indicates a parasite has emerged. The aphid in the middle is healthy.
- Aphid parasite life cycle: The adult lays an egg in an aphid. The egg hatches into a larva that feeds inside. After killing the aphid, the larva pupates in a small tube as a pupa.

Visit the Natural Enemies Gallery at www.ipm.ucdavis.edu for more information!

University of California Agriculture and Natural Resources Statewide Integrated Pest Management Program

PHOTOS J.K. CLARK