



## Biological Pest Control

### Sprays

**Forceful Water Sprays**—Effective on aphids, spider mites, and other free-moving pests. Use sudden, sharp blasts of clear water to dislodge the insects, making sure to spray the whole plant thoroughly, including the undersides of the leaves. This type of spraying should be done in the morning or early afternoon.

**Bacillus thuringiensis (Bt)**—Many types of moth and butterfly larvae (caterpillars) can be controlled by this natural substance, which contains bacteria that is deadly to these insects. It is available as a powder or a liquid under the name Dipel. The insects must ingest the bacteria for it to work, so spray it directly on the foliage where the insects are feeding.

### Physical Controls

**Hand-picking**—Not for the squeamish! Be sure to squash, drown, or burn the insects after capturing. Hunting at night with a flashlight is a great way to control snails and slugs. Get rid of tent caterpillars by cutting off the branch just below the tent and burning it.

**Seedling protectors**—Place a can with both ends cut out over young seedlings to protect them from cutworms and other chewing insects. Using dry sawdust or shavings, mulch in a small circle around seedlings or young plants to help to ward off slugs and snails. Diatomaceous earth, a powder made from the fossilized skeletons of sea creatures, can be spread around the base of plants in a similar way. This product is effective on aphids, slugs, caterpillars and other soft-bodied pests, cutting their bodies and dehydrating them.

**Traps**—Place rolled newspapers around the garden to attract earwigs into the dark crevices, then throw away or burn the paper with the earwigs inside. A small piece of garden hose will also work—empty any earwigs into a jar of soapy water. Place upside down flower pots or boards on damp ground to attract snails and slugs, which can then be destroyed.

### *Helpful Friends*

**Birds**—Many eat insects and grubs. Encourage them to stay by providing food and shelter with a wide variety of plants. Remember to provide water as well.

**Spiders**—Work day and night to trap and eat insects and mites.

**Lacewings**—Can be bought and released if you are not lucky enough to have them in your garden already. They eat large quantities of aphids, mealybugs and spider mites. The adult females lay their eggs at the ends of hair-like stalks, so don't disturb these structures if you find any.

**Ladybird Beetles**—Will eat aphids, scale insects and mites. A word of caution if bought commercially - ladybird beetles need to fly in the spring to burn off their winter fat, so they may not stay in your garden. To increase the chances that they will stay, release them at night, when the weather is still, in the area where you have observed insect problems.

**Toads, Frogs, Salamanders & Snakes**—Feed on garden pests. Be sure to provide plenty of water at all times.

**Ground Beetles**—This insect is one of the most beneficial for controlling cutworms and other larvae. Do not confuse it with the black vine weevil—they look very similar. Ground beetles are shiny black nocturnal creatures that produce a foul smell if handled. Be careful not to destroy them by mistake.

**Flower Flies**—The name “ Flower Fly ” covers a large number of flies that are usually found hovering near flowers. Flower flies are very common and do not bite or sting. Many are brightly colored and resemble small bees. Their larvae feed on aphids.

See the handout “Beneficial Insects ” for further information.