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Green Lacewings

An adult green lacewing on a rose flower.

Green lacewings are interesting predatory insects found in most environments. The common green lacewing (*Chrysoperla* (=*Chrysopa*) *carnea*) occurs throughout North America, while other species are more restricted in distribution. The light green adult has long, slender antennae, golden eyes, and large, veined, gauze-like wings that are 1/2 - 1/3 inch long. It is a slow-flying, nocturnal insect that feeds on nectar and pollen, and it emits a foul-smelling fluid from special glands if captured. They are often attracted to lights at night, so you may see them sitting on your house or garage door if you leave the lights on for a while during the growing season.

Green lacewing adults are often attracted to lights at night.

Lacewing eggs are laid on long stalks on foliage.

The female lacewing lays eggs singly or in groups on leaves, each egg held away from the leaf surface on the end of a slender stalk. These are fairly conspicuous – if you know what you're looking for. A female lays up to 300 eggs over a period of 3-4 weeks, but often it does not survive that long in the field.

The larva, commonly called an aphidlion, resembles a green-gray alligator with mouthparts like ice tongs. An aphidlion seizes and punctures its prey with long, sickle-shaped jaws, injects a paralyzing venom, and sucks out the body fluids. After feeding and growing to ½ inch in length during a 2-3 week period, the larva spins a spherical, white silken cocoon in which it pupates. The adult emerges in about 5 days through a round hole that it cuts in the top of the cocoon. It overwinters as a pupa within its cocoon or as an adult, depending on the species.

The immature green lacewing has formidible mouthparts.

A lacewing pupa on a leaf.

Green lacewing larvae are voracious predators.

An aphidlion is a voracious feeder and can consume up to 200 aphids or other prey per week. In addition to aphids, it will eat mites and a wide variety of soft-bodied insects, including insect eggs, thrips, mealybugs, immature whiteflies, and small caterpillars. Aphidlions will also consume each other if no other prey are available.

Green lacewings are available from many commercial suppliers, so you can purchase them to release in your garden. Once their food source is exhausted they will leave the area. The predatory larvae feed for 2-3 weeks before they become adults. The adults must have a source of nectar, pollen, or honeydew to feed on in the general vicinity of the pest area to stimulate egg laying, or they will leave. Providing an adequate food supply and suitable adult habitat can contribute to lacewings remaining and reproducing in your backyard. Additional releases can provide a continuous supply of larvae if adults do not stay and reproduce.

Photo by Daniel L. Mahr

Containers of green lacewing eggs. The bran filler protects the eggs during shipping and simplifies application.

Green lacewings are usually sold as eggs, but also may be sent as larvae or adults. Eggs are sent in a packing material to cushion and separate the emerging larvae during shipment. The material — rice hulls, wheat bran, or corn grits, along with moth eggs for food so the larvae will be less likely to eat each other — also makes it easier to distribute the very tiny eggs evenly. The lacewings should be released as soon as they begin to hatch. Releases are made by sprinkling the contents of the container onto infested plants. The newly hatched larvae will be very tiny (about the same size as the eggs) so you may have difficulty seeing them. The released aphidlions will travel a considerable distance, up to 100 feet, in search of prey. Making releases early in the morning or late in the day when it is cooler, or on a cloudy day, increases the chances the lacewings will survive. Larger larvae, which consume aphids at a faster rate than newly hatched larvae, are available from some suppliers. Because they are cannibalistic, lacewings purchased as large larvae must be shipped in individual containers which increases the cost of the product. Lacewings released as pre-fed adults that are ready to lay eggs can fly away upon opening the shipping container, so greater care must be taken when releasing lacewings at this stage to ensure their establishment in the infested area.

Green lacewing larvae devour aphids and other small, soft-bodied insects.

Green lacewings are a good biological control agent for aphids.

The number of lacewings needed for effective control depends on the pest population and climatic conditions. For control of moderate aphid infestations in home gardens, 5-10 lacewing eggs per plant or 1,000 eggs per 200 square feet are recommended. Two or three successive releases made at two week intervals are better than a single release. Suppliers usually make recommendations based on specific situations. These insects are extremely effective under certain conditions, especially in protected or enclosed areas such as a greenhouse, but they may fail to survive and provide control when conditions are not favorable.

An adult green lacewing, close-up.

– Susan Mahr, University of Wisconsin - Madison

Additional Information:

- *Chyrsoperla* (=*Chrysopa*) *carnea, C. rufilabris* – on the Cornell University Biological Control website at www.biocontrol.entomology.cornell.edu/predators/Chrysoperla.html
- Find companies to order green lacewings from in the publication *Suppliers of Beneficial Insects in North America* at www.cdpr.ca.gov/docs/pestmgt/ipminov/bensuppl.htm