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Lady Beetle Releases for Aphid Control: How to Help Them Work

Many retail stores sell lady beetles (commonly called ladybugs) for controlling aphids in gardens and landscapes. Your customers might wonder: Does releasing lady beetles really work? University of California research has demonstrated lady beetle releases can effectively control aphids in a limited area if properly handled and applied in sufficient numbers. However, because of inadequate release rates or poor handling at the store, in shipping, or after purchase, it is likely most lady beetles purchased at stores fail to provide satisfactory control. Here are some things to consider if you sell lady beetles:

Keep lady beetles refrigerated.

Live lady beetles on display are attractive to customers, but beetles left out at room temperature will rapidly deteriorate. Perhaps leave out one container with an attractive display advising customers to take a container of fresh beetles from the cooler and refrigerate them at home until they release them.

Lady beetles need water.

When you receive a shipment of lady beetles, mist them with a little water before refrigerating them. Use a squirt bottle and don't allow water to puddle in containers. Repeat about weekly.

Don't sell dead lady beetles.

Inspect your packets regularly and toss out any that have many dead lady beetles, or combine and save just the live ones. Try to purchase from primary suppliers (those who obtain beetles directly from collectors) and avoid suppliers who regularly ship dead beetles. Generally, retailers shouldn't store beetles for more than two months.

Suggest adequate release rates.

University research shows high numbers of lady beetles are required to control aphids. One large, heavily infested rose bush in the landscape required two applications of about 1,500 lady beetles each, spaced a week apart. Most packages sold in stores contain only enough lady beetles to treat one aphid-infested shrub or a few small plants.

Release lady beetles at dusk or early evening.

Lady beetles will fly away almost immediately if released during the heat of the day or when the sun is shining. Spray a fine mist of water on the plants, as giving beetles a drink can keep them around longer. Place beetles at the base of plants or in the crotches of low branches. Lady beetles will crawl higher into the plant in search of aphids. Don't release lady beetles on plants that have been sprayed with insecticides. Residues from most insecticides are likely to kill the beetles. Insecticidal soaps and oils, once they dry, won't leave toxic residues.

Customers should expect lady beetles to fly away in a few days.

Even when released with care, lady beetles will fly away within a few days. About 95% of released beetles in research studies flew away within 48 hours. Lady beetles are unlikely to lay eggs on the plants they are released on. If aphids return a week or two later, customers will need to release more lady beetles, hose aphids off with water, use insecticidal soap sprays, or wait for other native beneficial insects to fly in. Instead of releasing lady beetles, some customers might get better results by hosing aphids off with water or using insecticidal soap or horticultural oil sprays. However, these beneficial insects can be fun and educational!

J. K. Clark, UC IPM

The convergent lady beetle, **Hippodamia convergens***, named for the converging white marks on its thorax, is the species sold in stores for aphid control. Suppliers collect beetles from large overwintering aggregations in California's foothills and mountains. Many other species of lady beetles occur naturally in California landscapes but aren't sold.*

See UC IPM's Natural Enemies Gallery at http://www.ipm.ucdavis.edu/PMG/NE/convergent_ladybeetle.html for information about the convergent lady beetle's life cycle. If you are interested in finding out more about UC research on lady beetle releases for controlling aphids, we have posted several journal articles on our newsletter Web site.

Life-cycle development and stages of the convergent lady beetle: Egg (left), larva (center), and pupa (right). J. K. Clark, UC IPM