



Some Concerns with Using Wild Collected Lady Beetles

At the 2016 Northeast Greenhouse Conference and Expo, during the “Advanced Biocontrol Panel” with Suzanne Wainwright-Evans, Buglady Consulting, Ron Valentin, Bioworks and Jeff Marstaller, Cozy Acres Greenhouses, there were many excellent questions. For example,

What about using wild collected lady beetles (a. k. a., ladybirds or ladybugs) for aphid control?

When starting out using biocontrol agents, many growers consider using the well-known and familiar "ladybug" for aphid control. These generalist predators can feed upon aphids, soft scale, small caterpillars, and other small insects, as well as pollen and nectar. Ladybird beetles are relatively inexpensive and can be stored in the refrigerator.

Figure 1: & 2 Adult (left) and larvae ladybird beetles. Photos by L. Pundt



However, wild collected ladybeetles such as *Hippodamia convergens* are collected from the mountainous areas of the west coast where the ladybird beetles migrate and aggregate in large masses. This removes lady beetles from their native habitat. Because they are field collected and not mass-produced, quality control guidelines for *H. convergens* have not been developed.

Adult beetles are highly dispersive and once released in greenhouses may leave. They are also poor at searching out pests so need to be used when there are high populations of aphids. If wild harvested from natural winter

aggregation sites, these beetles may inadvertently carry endoparasites and pathogens that can potentially affect native ladybird beetles. A small wasp (*Dinocampus coccinellae*) that develops as an internal parasite may have parasitized wild collected ladybird beetles. A microsporidium, *Nosema hippodamiae*, has also been detected in some shipments that shortens their lifespan and reduces the number of eggs laid. There is the possibility that these parasites and pathogens may affect native ladybird beetles.

There is a need for a more cost-effective rearing system for ladybird beetles since the cost of producing them is high. The two-spotted ladybird beetle, *Adalia bipunctata*, is reared at commercial insectaries and feeds upon all aphid species. Other more specialized ladybird beetles commercially reared include *Delphastus pusillus* (a whitefly predator), *Cryptolaemus montrouzieri* (a mealybug predator) and *Stethorus punctillum* (a spider mite predator).

By Tina Smith, UMass Extension and Leanne Pundt, UConn Extension, 2016, updated by L. Pundt 2019.

References:

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From: Biological Control: A guide to Natural Enemies in North America website
by Dr. Anthony Shelton: <https://biocontrol.entomology.cornell.edu/index.php>

Hippodamia convergens

<https://biocontrol.entomology.cornell.edu/predators/Hippodamia.php>

Stethorus punctillum

<https://biocontrol.entomology.cornell.edu/predators/spunctillum.php>

Cryptolaemus montrouzieri

<https://biocontrol.entomology.cornell.edu/predators/Cryptolaemus.php>

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