



MULTICOLORED ASIAN LADY BEETLES

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Lady beetles feed on aphids and other soft-bodied insects that can damage plants in agricultural crops, gardens and landscapes, making them beneficial insects to farmers and gardeners. However, one lady beetle species, the multicolored Asian lady beetle, *Harmonia axyridis* (Pallas), has become very troublesome in Minnesota. Also known as the Asian lady beetle, Halloween lady beetle, and Japanese lady beetle, these insects cluster around buildings in large numbers during fall as they search for protected sites to overwinter.

Where did they come from?

The multicolored Asian lady beetle is a native of eastern Asia. These insects were released by the U.S. Department of Agriculture in California in 1916 and in 1964 -1965 for biological control of pecan aphids. They were also released for additional biological control programs from 1978 through 1982 in Connecticut, Delaware, Georgia, Louisiana, Maine, Maryland, Mississippi, Ohio, Pennsylvania, and Washington. Despite these releases, lady beetles were not recovered and they did not appear to become established.

Then in 1988, a population of multicolored Asian lady beetles was found in Louisiana, north of New Orleans. These lady beetles spread quickly throughout the southern and eastern United States. No one knows whether their presence today is due to deliberate releases or

accidental introductions.

Multicolored Asian lady beetles were never introduced into Minnesota through deliberate releases, although they did move into the state from nearby areas. They were first sighted in Minnesota in November, 1994. The first report of major infestations around buildings occurred in 1998, and by 2000 the insect was generally distributed throughout the state. **These lady beetles are not and never have been part of any release program in Minnesota.**

Identification

The multicolored Asian lady beetle looks very similar to other lady beetles but is generally larger, about 1/3-inch long. Its appearance is quite variable, ranging from orange to yellow to red or even (rarely) black. This beetle typically has 19 black spots which can vary in appearance from well-defined to no more than faint traces on its wing covers. These lady beetles may also have fewer than 19 spots and some may have no spots at all. Perhaps the most reliable identifying characteristic of the multicolored Asian lady beetle is the prominent black 'M'-shaped marking behind its head. This 'M' can look thick, thin or even broken in appearance.

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The immature larvae are alligator-like, and appear similar to other lady beetle larvae. The larvae are blue to black with two orange stripes, and rows of small, spined protuberances on their bodies.

Habits

In Asia, multicolored Asian lady beetles feed primarily on aphids found in trees. In the U.S., they feed on aphids not only in trees but also in agricultural crops and gardens. In fact, the multicolored Asian lady beetle is an important predator of soybean aphids, a serious pest of soybeans in Minnesota and other Midwest states.

In their native Asian habitat, these insects fly to cliffs and rock outcroppings each fall where they overwinter in large numbers. In the absence of such areas in the U.S., the beetles seek out sunny sides of tall or prominent buildings during fall. Lady beetles are particularly attracted to buildings that have contrasting dark and light areas. Because the beetles feed on aphids in trees, buildings adjacent to wooded areas are more

likely to encounter large numbers of multicolored Asian lady beetles than buildings in open areas.

Large numbers of lady beetles generally begin to fly to buildings on the second day of temperatures above 65° F that follow freezing or near freezing temperatures. Such conditions usually occur in Minnesota between late September and late October.

Once lady beetles reach buildings, they crawl into cracks and gaps around windows, doors, roof lines, and other openings. Some continue to move inside the structure until they reach the living areas of homes where they soon die. Others will find suitable overwintering inside wall voids, attics, and other areas, sometimes forming large living masses of insects.

Why do we see lady beetles during the winter?

Mild, sunny winter days can wake these dormant insects. The warmth will reach them at different rates, depending on where the lady beetles are located within the building, so they do not all become active at the same time. As they wake up, they follow the warmth into the home's living quarters. Once there, they move towards windows and other sunny areas. Eventually all lady beetles overwintering inside buildings become active. During spring, they try to move outdoors but many remain trapped indoors.

Despite circumstantial evidence, multicolored Asian lady beetles do **not** reproduce indoors -- all the lady beetles seen inside during winter and spring entered buildings the previous fall.

Importance

Although multicolored Asian lady beetles can be a nuisance when they occur in large numbers, they do not infest wood, destroy

fabrics, eat our food, or damage other property. These lady beetles cannot sting and they are not known to carry disease.

However, there are some problems with multicolored Asian lady beetles. First, some can bite hard enough to break human skin, causing minor, short-lived discomfort. These bites are incidental, as the beetles are presumably searching for moisture or food. Second, they can secrete a strong-smelling yellowish liquid from the joints of their legs, a process called reflex bleeding. This liquid can stain light colored surfaces. Third, exposure to dead lady beetles in buildings can cause allergic reactions in a small number of individuals.

Management

Prevention is the most effective step in managing lady beetles. Check the outside of your home for spaces and cracks that may allow insects easy entry. Lady beetles can fit through openings as small as 1/8 inch in size. Make any necessary repairs by the end of September. This will not eliminate all lady beetles but it can significantly reduce the number entering buildings.

* Seal cracks and spaces around doors, windows and fascia boards. Also check for gaps and cracks where different materials meet, such as brick and wood siding. Seal cracks with caulk, such as silicone, elastometric latex, or silicone/acrylic.

* Seal areas where cable TV wires, phone lines, and other utility wires and pipes, outdoor facets, dryer vents and similar objects enter buildings. Seal with caulk or for larger spaces use polyurethane expandable spray foam, steel wool, copper mesh, or other appropriate sealant.

* Repair or replace damaged window and door screens. Repair or replace damaged screens in roof and soffit vents, and in bathroom and kitchen fans.

* Install door sweeps or thresholds to all exterior entry doors. Install a rubber seal along the bottom of garage doors

Physical exclusion can be supplemented with a residual insecticide barrier. For insecticides to be effective, they must be applied **before** insects begin to enter buildings. The best time to treat is usually late September or early October. Some examples of effective insecticides available to the public include those containing:

- * bifenthrin
- * cyfluthrin
- * cypermethrin
- * deltamethrin
- * permethrin.

CAUTION: Read all label directions carefully before buying insecticides and again before applying them. Information on the label should be used as the final authority.

Be sure the product you intend to use is labeled for use on the exterior of buildings. Apply the insecticide according to label directions around doors, windows, and roof lines, paying particular attention to the south and west sides where the insects are most numerous. You may also consider hiring a structural pest management service. Pest management professionals have experience as well as access to additional residual insecticides for effectively managing lady beetles.

Indoors

Indoor insecticide sprays are of limited value as they do not prevent additional lady beetles from entering your home. Once lady beetles move into wall voids in the fall there

is no practical measures to prevent them from emerging later during winter or spring.

Once you find lady beetles in your home, removing them with a vacuum is the only practical solution. Keep in mind that lady beetles are not automatically killed when they are vacuumed. It is probably necessary to change the bag frequently to prevent lady beetles from escaping and to minimize their smell.

An economical method for vacuuming lady beetles is to use a knee high nylon stocking that has been inserted into the extension hose and secured with a rubber band. As you vacuum, the lady beetles are captured in the stocking. When the vacuum is turned off, remove the stocking so the captured beetles won't escape. The rubber band can be used to close the stocking which then can be thrown away or reused after the contents have been discarded (Figure 1).

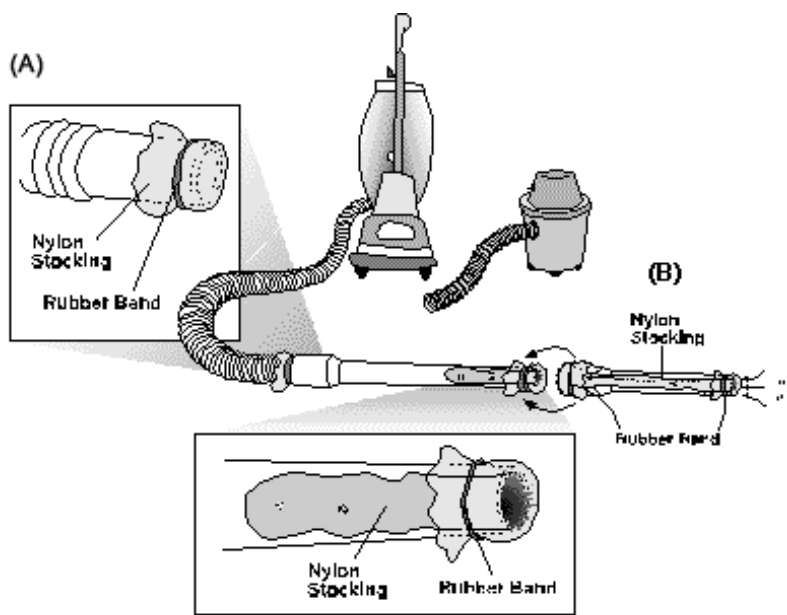


Figure 1. A nylon stocking inserted into a vacuum cleaner extension wand creates a handy bag for capturing lady beetles. Options also are to (A) rubber band a piece of nylon over the flexible hose to prevent lady beetle entry into the vacuum cleaner, (B) secure a nylon stocking (open at both ends) inside the foremost section of the wand to somewhat cushion the lady beetles and prevent staining.

Photographs by Jeff Hahn. Diagram courtesy of Ohio State University Extension.

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