PENNSTATE
College of Agricultural Sciences • Cooperative Extension
Entomological Notes
Department of Entomology

MULTICOLORED ASIAN LADY BEETLE

Harmonia axyridis (Pallas)

INTRODUCTION

A native of eastern Asia, the multicolored Asian lady beetle, *Harmonia axyridis*, was introduced into the United States by the U.S. Department of Agriculture as a biological control agent. This tree dwelling beetle, of the family Coccinellidae, is an important predator of aphids and scale insects. It was originally released in Pennsylvania in 1978 and 1981, but the first overwintering beetles were not recorded until 1993. This beetle's recent population increase in Louisiana, Pennsylvania, and other northern states may not have resulted from the earlier USDA releases. Instead, they are thought to be from a new source that was accidentally introduced in New Orleans from an Asian freighter.

Adult multicolored Asian lady beetles were first observed in Pennsylvania during the fall of 1993. Large numbers were found congregating on windows, doors, and porch decks. These beetles become a nuisance when they inundate homes from September through April.

DESCRIPTION

Multicolored Asian lady beetles are slightly larger than native lady beetles, with adults measuring 9/32 inch (7 mm) long and 7/32 inch (5.5 mm) wide (Fig. 1a). They are oval or convex in shape, and yellow to red in color (with or without black spots on the wing covers). The beetles' spots, which can vary in size and pattern, number from no spots to as many as nineteen. The head is usually concealed beneath the disk-shaped pronotum, which is cream to yellow in color with a black 'M' design in the center. Asian lady beetle larvae are elongated, flattened, and covered with minute tubercles or spines (Fig. 1b). The eggs, which are laid upright in clusters of about twenty, are oval and yellow (Fig. 1c).

LIFE HISTORY

In Pennsylvania, the life cycle from egg to adult to egg takes about three to four weeks depending on temperature and food abundance. There are multiple generations per year. The eggs are laid on the undersides of leaves of low-growing ornamentals, forest trees, roses, wheat, tobacco, soybean and numerous other plants. They take from three to five days to hatch. During the first twelve to fourteen days after hatching, the larvae use their chewing mouthparts to feed on aphids. Adults emerge several days after pupation and can live for more than one year.

Figure 1. Multicolored Asian lady beetles (a) adults, (b) larva, (c) eggs.

Beginning about the first of October, during a sunny, warm afternoon following a cold night, the multicolored Asian lady beetles congregate outside houses, sheds, and other buildings in search of overwintering sites. The beetles are apparently attracted to the sunlight reflecting off of the south or southwest-facing sides of the building. A similar behavior is seen in their native Japan where the beetles fly to south-facing rock cliffs and outcroppings. There they enter cracks and crevices to overwinter. Females overwinter (without mating) along with the aggregate population. Mating occurs later the next spring.

DAMAGE

The greatest damage caused by the multicolored Asian lady beetle is the discomfort they give to homeowners. It is not uncommon for tens of thousands of beetles to congregate in attics, ceilings and wall voids, and due to the warmth of the walls, will move around inside these voids and exit into the living areas of the home.

In addition to beetles biting (which they do), they exude a foul-smelling, yellow defensive chemical which will sometimes cause spotting on walls and other surfaces. Most people are only annoyed by the odor of these chemicals. However, some individuals have reported experiencing an allergic reaction to the defensive excretions. Rhinoconjunctivitis (sinus irritations) and mild skin irritations have been reported subsequent to encounters with the multicolored Asian lady beetle. It is probably not an over-reaction to wash hands or other skin after contacting the beetles. In at least one controlled study, the severity of rhinoconjunctivitis subsided with the removal of beetles from the home.

MANAGEMENT

Before Beetles Enter the Structure:
Mechanical exclusion seems to be the best method of control to keep Asian lady beetles from entering homes and buildings. Cracks around windows, doors, siding, utility pipes, behind chimneys, and underneath the wood fascia and other openings should be sealed with good quality silicone or silicone-latex caulk. Damaged screens on doors and windows should be repaired or replaced. Attics, fireplace chimneys, and exhaust vents should be covered with number 20 (or smaller) screen mesh.

Exterior applications of insecticides may offer some relief from infestations where the task of completely sealing the exterior is difficult or impossible. Applications should consist of a synthetic pyrethroid (i.e. deltamethrin, cyfluthrin, lambda-cyhalothrin, cypermethrin, sumithrin or tralomethrin) and should be applied by a licensed pest control operator in late September or early October just prior to beetle congregation. Unfortunately, because insecticides are broken down by sunlight, the residual effect of the material will be greatly decreased and may not be effective much beyond several days or a week.

After Beetles Have Entered the Structure:
After the beetles have gained access to the wall voids or attic areas, it is not advisable to use an insecticide to control them. Insecticidal treatment of the voids may kill thousands of beetles, but there is the likelihood that another household pest, carpet beetles, will begin to feed on the dead lady beetles and might subsequently attack woolens, stored dry goods or other animal products in the home.

If numerous lady beetles are entering the living areas of the home it is advisable to locate the places where the beetles gain access. Typically, beetles will emerge from cracks under or behind baseboards, around window and door trim, and around exhaust fans or lights in ceilings. Seal these openings with caulk or other suitable materials to prevent the beetles from crawling out. A temporary solution is to use tape to stop the beetles. A helpful hint to remember: the beetles are attracted to light and can see light entering through cracks in the walls or ceilings. Initially, concentrate on sealing cracks in the rooms where beetles are most prevalent.

Although aerosol-type pyrethrum foggers will kill beetles that have amassed on ceilings and walls in living areas, it will not prevent more beetles from emerging shortly after the room is aerated. For this reason use of these materials is not considered a good solution to long-term management of the problem. Spray insecticides, directed into the cracks and crevices where beetles emerge will not prevent them from emerging and is not a viable or recommended treatment.

Black (ultra-violet) light traps may provide relief from beetles flying or crawling around the interior of homes. These traps are available for purchase from pest control companies and pest control supply companies. If you decide to buy a trap, get one that has a sticky glueboard trap to collect the beetles. The glueboards can be replaced when they become full of beetles. DO NOT use the type of light trap that utilizes an electrical grid (commonly called 'bug zappers') to kill the beetles inside the home. Light traps are most effective at night when there are no competing light sources, or during the day when curtains are drawn and other light sources are minimized.

Finally, the use of a vacuum is still the most efficient method of collecting beetles in the home. The major complaint for this method is that the beetles become agitated and expel the yellow, foul-smelling repellent, which is then circulated into the air by the vacuum exhaust. Also, it is advisable to empty the bag and beetles after each vacuuming.

WARNING

Pesticides are poisonous. Read and follow directions and safety precautions on labels. Handle carefully and store in original labeled containers out of the reach of children, pets, and livestock. Dispose of empty containers right away, in a safe manner and place. Do not contaminate forage, streams, or ponds.

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