



## Pest Management

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### Multicolored Asian Lady Beetle (*Harmonia axyridis*)

The U.S. Department of Agriculture made several releases of the multicolored Asian Lady beetle throughout the eastern United States in an attempt to introduce the beetle into North America as a potential biological control agent. It took a long time for the releases made in Louisiana and Mississippi in 1979 and 1980 to become established and spread. They are now widely established in the South, Northeast, Midwest, and as far west as Oregon.

**Description:** *H. axyridis* occurs in many color combinations. Adults are oval and convex, about 6 mm long and 5 mm wide. North American populations have a mix of individuals ranging in color from pale yellow-orange to bright red-orange, with or without black spots on the wing covers. The head, antennae, and mouthparts are generally straw-yellow, but they are sometimes tinged with black. The pronotum is also straw-yellow and has up to five black spots or lateral spots usually joined to form two curved lines, an M-shaped mark, or a solid trapezoid. The wing covers are generally yellow-orange in unspotted beetles. In fully spotted beetles, each wing cover has 10 black spots.

**Damage:** Outdoors during the growing season, Asian lady beetles are quite beneficial. As predators of aphids associated with trees, shrubs, ornamental plants, and some agricultural crops, they are reported to be better than our native lady beetles at tracking down aphids. Multicolored Asian lady beetles are not poisonous or otherwise harmful to humans, pets, or property. They do not reproduce indoors. However, the mere presence of such large numbers inside homes can be a major nuisance.

This lady beetle does not carry disease, but it will bite in rare cases. Reports by Kovach (2004) indicated that biting and feeding may produce sharp, stinging pain that rapidly subsides. Also, Multicolored Asian lady beetles have been reported to cause damage to fruit crops (both sound and previously injured fruits). Contamination of wine, which is due to the release of an orange fluid by the lady beetle when disturbed or crushed, was reported to be another potential problem.

**Life Cycle:** It is believed that females overwinter unmated in protected sites, with the majority of the population mating later in the spring. Eggs generally hatch in three to five days. The larval stage lasts 12 to 14 days, and the pupal stage, which takes place on leaves, lasts 5 to 6 days. In cool spring weather, development from egg to adult can take 36 days or longer. After emergence, adults can live as long as two to three years under optimal conditions. A beetle consumes about 300 aphids before it reaches adulthood, feeding on more than 50 aphid species.

**Host Plants:** Multicolored Asian lady beetles like a variety of nursery, ornamental, and field crops in North America, including cotoneaster, rose, Christmas trees, apple, pecan, alfalfa, wheat, cotton, tobacco, and small grains. They are also found in trees, such as peach, magnolia, crape myrtle, and maple.

#### Cultural Control:

Multicolored Asian Lady beetles enter the house through small openings around doors, windows, and utility access points. In addition, they can enter through siding gaps, cracks, and attic vents. Sealing those entry points is the best method of keeping Asian Lady beetles and other pests from entering the home. Use a high-quality silicone caulk to seal all cracks. After the beetles have gained entry, the use of insecticides is not recommended, except for severe cases. To remove beetles in the home, use either a broom and dust pan or a vacuum cleaner. When using the vacuum, be sure to change the bag to prevent escape of the collected beetles.

#### Control Checklist:

- Seal windows and doors with weather stripping.
- Prevent the beetles' entry by caulking cracks around windows, doors, utility pipes, and siding.
- Pay special attention to windows and lighting fixtures since the beetles are attracted to light.
- Install 20-mesh or finer screen over attic and exhaust vents.
- Check attic and basement for possible entry sites.

- Use vacuum cleaner or a broom and dustpan to pick up beetles. To avoid damaging the vacuum, use a sweeper attachment with a knee-high nylon hose inserted in the end.
- If spraying for beetles inside, pick up dead beetles with vacuum cleaner. They then can be released outside.
- Seal between logs if residence is a log home.
- Using pesticides to kill them is not suggested.
- Be patient; the beetles will leave on their own in a few days or weeks.

### Trapping Methods:

An indoor trap, invented by USDA scientists in Georgia, uses a blacklight to capture flying insects, including the Asian lady beetle. This trap is humane and contains no insecticide, and it allows the beetles to be released outdoors in the spring. The Black Light Trap is available commercially and is very effective at night. But it is ineffective during daytime and is rather expensive (\$69.95 + \$6.95 S&H, or more).

A new low-cost window trap for daytime catches of lady beetle is being developed and tested by West Virginia University researchers. Preliminary results showed that the trap was effective during daytime, when room temperature is high enough to allow enough lady beetle activity. It was also suggested that using both traps (light and window) together could reduce lady beetle population by 50%-65%. For more information, please contact your extension agent.

A new home-made light trap also has been developed by Ohio State University, which uses items found at home or the local hardware store (e.g., clamp light, a 60-watt incandescent bulb, twist ties, transparencies or plastic report covers, 2-gallon plastic milk containers with caps, and black paint). This trap is effective and very inexpensive. For diagram and assembly instructions, please visit the Ohio State University (IPM) Website. <http://www.ag.ohio-state.edu/~ipm/lady/blt1.htm>

### Chemical Control (Exterior)\*:

Fast-acting, residual formulations of synthetic pyrethroids (e.g., cypermethrin, cyfluthrin, lambda cyhalothrin, and deltamethrin) can be applied around eaves, attic vents, windows, doors, siding, and other likely entry points for pests. The key is to initiate such treatments in late September or early October before the beetles enter buildings to overwinter. Once the beetles are indoors (i.e., winter or early-spring), such treatments are ineffective. These sprays serve as a chemical barrier, preventing the insects from entering, so timing and thorough coverage are essential for effective control. The following is a list of products now labeled for use by the West Virginia Department of Agriculture as exterior treatments. Both chemical and trade names are listed.

### Active Ingredient: Bifenthrin

Trade Names:

Home Defense Indoor & Outdoor Insect Killer  
Home Defense Indoor & Outdoor Killer 3  
KGRO RTU Home Pest Insect Control  
Ortho Home Defense Indoor & Outdoor Insect Killer

### Active Ingredient: Deltamethrin

Trade Names:

Bonide Household Insect Control RTU  
Termite & Carpenter Ant RTU  
Clipper Spider Kill II Marine & Household Insects  
ZEP Commercial RTU Pest Control III  
Enforcer Home Pest Control XII  
Enforcer Ant Kill Home Pest Control  
Annihilator Insecticide Premise Spray

### Active Ingredient: Cyfluthrin

Trade Names:

Bayer Advanced Lawn & Garden Multi-Insecticide  
Bayer Advanced Rose & Flower Insecticide  
Bayer Advanced Home Pest Control Indoor/Outdoor Ready  
Raid Yard Guard Lawn Insecticide  
Raid Yard Guard Ant & Roach Home Barrier  
Raid Yard Guard Mosquito  
Raid Yard Guard Wasp & Hornet Nozzle  
Cylence-On Insecticide

### Active Ingredient: Tralomethrin

Trade Names:

Saga Multi-Purpose Residual Spray Insecticide  
Vikor Home & Yard Insect Control  
Rid-A-Bug Home Insect Killer  
Ace Home Insect Control  
Do It Best Home Insect Control  
Rid Home Insect Killer Ready to Use  
No-Pest Home Insect Control  
Agway Home Insect Control  
Hot Shot Rid-A-Bug Home Insect Killer  
Hot Shot Home Insect Control  
No-Pest Home Insect Control 2  
Real-Kill Home Insect Control 3  
Spectracide Ant Shield 1 and 2  
Spectracide Flea and Tick Killer 2  
Spectracide Bug Stop Indoor & Outdoor Home Insecticide  
Green Thumb RTU Home Insect Killer  
Conquer Home Insect Control  
KGRO Home Pest Insect Control 3  
Real-Kill Home Insect Control 2  
Real-Kill Home Insect Control 4

### Active Ingredient: Esfenvalerate

Trade Names:

Ortho Roach, Ant & Spider Killer  
Evercide Intermediate 2527  
Ortho Bug-B-Gon Multi-Purpose Insecticide Control Concentrate  
Concentrate Bug-B-Gon Multi-Purpose Insect Killer  
Yard Spray Concentrate  
Adams Yard Spray  
Lawn Spray Concentrate  
Defy Yard & Kennel Spray

**Chemical Control (Interior)\*:** Indoor pesticide applications have limited effectiveness since large numbers of these insects typically hide in inaccessible areas. However, if an insecticide is used indoors, it should be **limited to specific locations** for relief of large and persistent lady beetle infestations. Residual pyrethroids appear to be the most effective, but they must be applied directly to the beetles or to the surfaces they crawl over. Different companies may market products under a variety of trade names that contain a residual pyrethroid as the active ingredient. If you need to spray, make sure that you use an aerosol insecticide labeled for household insects, and do not forget to remove the dead beetles.

**Do not** use any type of aerosol fogger or "bug bomb" in an attempt to control lady beetles. Such chemical treatments are not warranted. These treatments do not control the majority of lady beetles behind walls and other unseen areas. In addition, the active ingredient in these "bug bombs" has limited effectiveness against the pests. Overuse of these products can lead to unnecessary human exposure. These products can actually increase some indoor pest problems when scavenging pests such as ants, carpet beetles, and larder beetles move in to feed on accumulated dead insects.

**NOTE:** It is important to remember that although these insects are a nuisance to humans, they are beneficial, and mechanical control is highly preferable to chemical control. However, if chemical controls are employed on the exterior of the home, an approved pesticide must be used, and appropriate safety precautions listed on the pesticide label must be followed. For more information, please contact your county WVU Extension Office.

\*--When using any type of pesticide, always be sure to read the label completely and follow all label directions to comply with label agreements and ensure individual safety.

## References:

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*This fact sheet contains information for educational purposes only. References to commercial products or trade names does not imply endorsement by the West Virginia University Extension Service, nor is discrimination meant for products not mentioned. Information related to pesticide recommendations are subject to change at any time. It is the responsibility of the applicator to read the latest product label when using any pesticide. The authors, West Virginia University and the WVU Extension Service assume no liability arising from the use of these recommendations.*