



# BUG BIZ

Pest Management and Insect Identification Series



## The Assassin in the Garden

Why this threatening-looking insect predator is good to have around

### Overview

The milkweed assassin bug, *Zelus longipes*, may look frightening with its bright orange color and needle-like mouth parts, but this insect is an important predator of many household and garden pests. Assassin bugs are true bugs (Hemiptera) in the family Reduviidae. They feed on a diverse variety of insects including flies, mosquitos, roaches, beetles, aphids and caterpillars. While these insects will not attack humans or pets, their bright colors should serve as a warning. Painful bites can occur in self-defense if the insect is handled or if accidental contact is made during gardening activities. Bites are rare despite the common occurrence of these insects and the benefits of having them in a garden far outweigh the risks.

### Distribution and Habitat

The milkweed assassin bug is widely distributed throughout North and South America (Hart, 1986). It is a common sight in gardens, agricultural fields and landscaped habitats throughout the Gulf Coast states. Adults and immatures (also known as nymphs) are active during the day and usually can be observed hunting in the foliage of many types of shrubs, trees and other plants. In south Louisiana they can even be seen during fall and winter months when few insects are active.

### Description and Life Cycle

Adult milkweed assassin bugs are bright orange and black slender-bodied insects approximately one inch in length with long legs and antennae (Figure 1). They can be distinguished from other brightly colored true bugs such as the milkweed bug or the boxelder bug (both are plant feeders) by the protruding head and the presence of white markings on the legs and underside of the abdomen. The visible rostrum (or needle-like "beak") is orange at the base and black near the tip. The rostrum usually is held curved beneath the head and thorax when the insect is not feeding.

Like other true bugs, milkweed assassin bugs have an egg, nymph and adult stage. Eggs are small, brown and cylindrical. They usually are laid in clusters attached to the surfaces of plant foliage. Nymphs emerge from eggs and can often be seen in groups (Figure 2) before they disperse and begin solitary hunting. Nymphs resemble adults in shape and color, but lack wings. The nymphs go through a series of five molts before becoming reproductive adults. Young nymphs are small (<0.5 inches) and primarily orange-bodied with black legs. Older nymphs develop wing buds on the back of the thorax and begin to show black and white markings on



Figure 1: Milkweed assassin bug (*Zelus longipes*) adult. Note the long black legs, white markings on the underside of the abdomen, and rostrum curved under the head and thorax. Clemson University – USDA Cooperative Extension Slide Series, Bugwood.org.



Figure 2: A group of milkweed assassin bug nymphs (*Zelus longipes*) emerging from an egg mass. Photograph by Megha Kalsi, University of Florida.

the abdomen (Melo et al. 2005). Development from egg to adult lasts approximately two months with faster development occurring in warmer months when food is abundant.

## Diet and Feeding Behavior

Milkweed assassin bugs are generalist predators. They feed on a great diversity of insects and other arthropods. These bugs are important biological control agents of many garden pests. Pest species commonly preyed upon include armyworms, tomato worms (AKA corn earworms), aphids, mealy bugs, leaf beetles and many others herbivorous insects. Milkweed assassin bugs also eat flies (including mosquitos) and bees. They can even take prey many times their own size!

Milkweed assassin bugs are ambush predators, which hide in foliage and wait for prey to approach. Their front legs contain a glue-like substance that traps and holds prey. Once captured, prey is paralyzed by rapid insertion of the rostrum into the body of the prey item (Figure 3). Digestive enzymes are, then, secreted and dissolved tissue is sucked-up using the rostrum like a straw.

## Bite Risk

Assassin bugs should never be handled or harassed. These slow-moving docile insects do not attack humans; however, they will use their rostrum in self-defense. If handled or accidentally contacted in a manner which threatens the insect, bites can occur. Bites are initially painful and may be followed by a burning sensation if oral secretions are injected. However, no toxins are present and the pain should remain local and subside quickly. A small red and itchy lump may persist for a few days. Bites from adults are more severe than bites from nymphs.

When working in dense foliage, keep an eye out for the bright orange colors which can serve as a warning of the milkweed assassin bug's presence. Avoid working or playing in close proximity to milkweed assassin bugs when possible to prevent accidental contact. If the insects cannot be easily avoided, gently use a tool to encourage the insect to go along its way. When prodded adults will usually fly off and nymphs will fall to the ground.

## Selected References

Hart ER. 1986. Genus *Zelus* Fabricius in the United States, Canada, and Northern Mexico (Hemiptera: Reduviidae). *Annals of the Entomological Society of America* 79: 535-548.

Melo MC, Coscaron MC, Filho BA. 2005. Immature stages of *Zelus longipes* (Heteroptera: Reduviidae, Harpactorinae). *Transactions of the American Entomological Society* 31: 101-110.



Figure 3: Adult milkweed assassin bug (*Zelus longipes*) with prey. Photograph by Anne Kirkley.

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**Authors:** Blake E. Wilson and Rodrigo Diaz,  
Department of Entomology, LSU AgCenter.

**William B. Richardson, LSU Vice President for Agriculture**  
Louisiana State University Agricultural Center  
Louisiana Agricultural Experiment Station  
Louisiana Cooperative Extension Service  
LSU College of Agriculture

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