



Red fire bugs

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What You Should Know

- Red fire bugs were first discovered in North America in Salt Lake City, Utah in 2008.
- These insects are seed feeders on a wide range of plants, including linden and mallow.

Red fire bugs, *Pyrrhocoris apterus* (Heteroptera: Pyrrhocoridae), are true bugs with vibrant red body and wing coloration (Figs. 1-2). These insects are native to central Europe, but are also found in western Siberia, southwestern Mongolia, India and northwestern China. In 2008, the red fire bug was first discovered in North America in the southeastern area of Salt Lake City, Utah. Their recent appearance in the United States cannot be explained, but likely they were transported on plant material from Europe or Asia. Much is unknown about the red fire bug in Utah, including what type of host plants they prefer. In Europe, they feed on a wide range of dry, ripe seeds; the nymphs and adults are most commonly found on mallow, linden and limes. A few thriving populations of red fire bugs exist in Salt Lake City, and they will likely expand their range throughout much of urbanized Utah.



Fig. 1. Red fire bugs massing on a flower pot, note the variable wing sizes and color patterns.¹



Fig. 2. Red fire bugs mating, note the shortened wings exposing the abdomen.¹

Life Cycle and Description

Red fire bugs go through simple metamorphosis (egg, nymph, adult) and typically have one generation per year, although some adults can live up to two years. The entire life cycle can take 2 to 3 months depending on the temperature. Overwintered females lay 40-80 eggs in a lifetime, starting in April and May. Eggs are white but gradually turn yellow-red before hatching in 10 to 14 days. Red fire bug nymphs go through five instars in 17 to 24 days before molting into adults. Young nymphs look similar to boxelder bugs (Fig. 3) while older nymphs look like the adults except are smaller and have reduced wing pads. Adults begin mating within a week of emerging; however, females do not lay eggs until the next year. Adults overwinter by entering a resting stage, called diapause, when the day length is less than 12 hours per day.

Red fire bugs are 6.5-12 mm long, and in general the females are slightly longer and wider. The forewings are variable in size, ranging from shortened to absent. The most common form in Utah is the shortened wing adult. The forewing color pattern is also highly variable when present, but is generally red with black spots. The wings cross over the back and are held flat against the body at rest. Red fire bug antennae are 4-segmented, slightly enlarged at the end, and are usually at least half the length of the body. The eyes are prominent, almost appearing to come from the "shoulders" (Fig. 2).

Host Range and Behavior

In their native range, red fire bugs feed on seeds from a wide range of plants. As with all true bugs, they have piercing sucking stylet that removes fluid. The most common host plant family is Malvaceae which includes mallow and linden. Some reports of cannibalism and predation on other insects has also been reported.

Nymphs and adults will seek shade during the day to ensure only one generation a year (i. e., warmer temperatures will accelerate adult development too early in the season). Red fire bugs are gregarious and can be found massing on structures, plants and under leaf litter (Figs. 1, 4-6).

In spite of their warning coloration, red fire bugs have numerous natural enemies and can respond to potential threats in two different ways.

Red fire bugs have a scent gland on each side of the thorax that can emit a foul odor, and they can also regurgitate an offensive fluid from the stomach. Reported natural enemies from Europe include mites, birds, mammals, amphibians and ants.



Fig. 3. A young red fire bug nymph.¹

Management

Because the red fire bug is new to North America, there are no insecticides registered for control in Utah. Chemical control of seed-feeding bugs in general is difficult and not effective because large nymphs and adults are tolerant of insecticides. Justification of insecticidal control depends largely upon the degree of the nuisance problem, the areas where they occur, and the numbers of bugs the homeowner is willing to tolerate. There are several other tactics that may be effective to minimize outbreaks.

- True bugs, especially the nymphs, are easily drowned. Regular use of a high-pressure garden hose to directly spray red fire bug congregations can be effective.
- Spraying red fire bugs with soap can be used as an alternative to synthetic insecticides. Mix approximately ½ cup of a liquid dish soap into 1 gallon of water and pour in a squirt bottle. Spray mixture directly on red fire bugs as often as necessary. Soap only kills the bugs that are being sprayed and has no residual effects once dry.
- To avoid accidental entry into the home, caulk or seal openings or foundation cracks, windows, and around plumbing, gas, or electrical conduits. Use weather stripping around doors and windows.
- Simply vacuum any red fire bugs that remain indoors because completely sealing the building may be impossible. Red fire bugs will not bite, sting or eat food products, but they can stain carpet and other fabrics.



Figs. 4-6. Red fire bugs avoid direct sunlight during the day and can be found in grass, leaf litter and in trees.¹

¹ Images courtesy of Erin Hodgson, Utah State University Extension (www.utahpests.usu.edu).

Precautionary Statement: All pesticides have benefits and risks, however following the label will maximize the benefits and reduce risks. Pay attention to the directions for use and follow precautionary statements. Pesticide labels are considered legal documents containing instructions and limitations. Inconsistent use of the product or disregarding the label is a violation of both federal and state laws. The pesticide applicator is legally responsible for proper use.

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