

Grasshoppers—Curse of Hot Dry Weather

In a normal summer we can expect slugs, aphids, picnic beetles, Asian beetles, Japanese beetles, yellow jackets, etc., to eat our fruits and vegetables. Due to the dry conditions this year, we can add grasshoppers to the list. Not only are they taking large chunks out of the leaves of my raspberries, but also they are nibbling on the fruit.

Grasshoppers are in the Orthoptera family, which includes crickets and katydids. Most features of the immature and adult insects are similar. Only the adults have fully developed wings, however. Coloration and patterning among nymphs also commonly change with age. Wing pods are present on immature stages and become more prominent as maturity approaches.

Grasshoppers are some of the most familiar of all insects and more than 550 species occur in North America. The Red-legged grasshopper is found throughout the U. S. and southern Canada but is most common in the upper Midwest. The Migratory grasshopper has an almost equally broad range but is absent in extreme southern Texas and Florida. The Two-striped grasshopper is found every where except in the Deep South. The Differential grasshopper is present throughout the U.S. except in the extreme northeast, southeast, and northwest. It is most abundant between the Rocky Mountains and Mississippi River. In other words, we are blessed with all four of the major species of grasshoppers.

The general life history of grasshoppers has them spending the winter as eggs, in an elongated egg pod containing 20 to 120 eggs. The eggs hatch in mid to late spring, depending on temperatures, location of the eggs, and species characteristics. In all four species, the period of egg hatch can extend over a considerable period if eggs are laid in scattered sites, or hatch may occur over a short period.

Development of the nymphs typically takes five to seven weeks, during which time they pass through five or six nymph stages. Females feed for about two weeks before laying their eggs. Eggs are laid in pods, often containing 50 or more eggs, and several pods may be produced. Each species has preferences as to where it lays eggs, with some preferring sun-exposed sites with compacted soil. Egg pods are typically inserted around the crown area or roots of plants.

Grasshoppers can show migratory behaviors, nymphs sometimes march considerable distances in bands during outbreaks. Adults are capable of flight and may fly several miles, often at elevations of several hundred feet. Some physical changes may occur in populations that become more migratory. For example, thinner body size and longer wings are produced by two striped and migratory grasshoppers that go into the more migratory phase.

Grasshoppers can be among the most difficult insects to control because of their great mobility. There are many natural controls such as birds, many other vertebrates, blister beetle larvae, and other insects. They also succumb to diseases produced by fungi,

protozoa, and nematodes. Weather conditions, particularly surrounding the period of egg hatch, are also critical to grasshopper survival, as adverse weather can inhibit egg hatch and kill young nymphs.

In many areas where grasshoppers affect gardens, the source is outside the garden areas of undisturbed soil such as fields, roadside ditches, and empty lots commonly serve as grasshopper breeding sites.

Grasshoppers are most easily controlled with insecticides when they are still immature and their location is restricted to breeding areas. Options for grasshopper control in these breeding areas include insecticides formulated as either sprays or baits. A variety of effective sprays for this purpose are readily available in garden shops, hardware stores and similar retail outlets. These include acephate (orthene), carbaryl (Sevin), and permethrin. These can be broadcast but may also be effective if applied in bands covering 50 percent of the area. Orthene, used according to directions, can be applied to pastures, roadsides and various trees and shrubs. Orthene can't be applied legally to garden crop foods.

Grasshopper baits generally contain bran or a similar carrier mixed with the insecticide carbaryl (Sevin). Baits are easy to apply, usually effective, and have little effect on beneficial insects. Disadvantages include slightly higher costs and less availability.

PLANT CLINICS: The Monday night plant clinics at the office are done for this year, but you can still talk to a Volunteer Master Gardener at the Lindstrom Farmer's Market, on Saturdays from 8am-noon on Highway 8 in the St. Bridget's Catholic Church parking lot. *Please note: there is no longer staff at the North Branch Office who can answer gardening questions.*

VOICE MAIL: You can leave a question for a volunteer Master Gardener at 651-674-4417. Depending on the volume of calls, they try to respond within a couple of days. During office hours ask for the Master Gardener voicemail, after hours, select ext. 18. You can also get your question answered on the web at: www.extension.umn.edu/askmg

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