

Slugs and Snails

Slugs and snails can be troublesome pests in the garden. There are many species of these mollusks, but only a few present a serious problem. Some of these are the gray garden slug, *Deroceras reticulatum*, the tawny garden slug, *Limax flavus*, the spotted garden slug, *Limax maximus*, and the brown garden snail, *Helix aspersa*.

Slugs and snails have limited protection against water loss and need adequate moisture levels to survive. They can absorb water directly through their skin or drink from puddles. Slugs and snails feed primarily at night, although they can also come out during foggy overcast weather, after rain, or after watering.

During the day, they seek protection from dehydration in cool, damp locations under leaves, mulch piles, rocks, stepping stones, wooden boards, porches, decks, crawl spaces, or flower pots. Large populations can sometimes be found under groundcover plants such as ivy, pachysandra, and vinca. Wood chip mulches also provide excellent habitat.



Slug damage

Slugs and snails travel by means of a large foot that glides over a trail of mucus or slime, secreted from glands located under their head. The slime provides a cushion over rough areas. This slime also serves as a trail marker. They return to their favorite hiding and feeding places night after night unless disturbed or the site becomes too dry. Slugs and snails tend to avoid crossing dusty or dry materials. The shiny dried slime trails left behind on plants or along the ground are good indicators of their activity.



Garden Slug
Size range: 3-5 inches



Slug eggs

Damage - Both eat large, ragged holes in the leaves of plants and may also completely consume young seedlings. They begin feeding early in the spring and continue through the growing season until frost. Slugs and snails feed on a wide variety of plant material and can be especially troublesome on hostas, violets, ageratum, strawberries, lettuce, and cabbage.

Life Cycle - Slugs and snails are hermaphroditic animals. Each individual has both male and female sex organs, but they usually require another individual to fertilize the eggs that each carries in its body. Each one is capable of laying a total of about 300 eggs. These are laid any time conditions are optimal, but peak times are the spring and fall.

The gel-like eggs are laid in clusters of 25, about an inch below loose soil in damp locations, and are covered with a layer of mucus. Eggs hatch in about 30 days. However, under dry conditions, the eggs may remain unhatched until adequate moisture has been absorbed. Slugs and snails reach adult size in 3 to 12 months and can live for several years. Temperature and moisture are the prime factors that influence their activity. In times of unfavorable environmental conditions, slugs can survive by burrowing as deep as 3 feet into the soil and snails will close up within their shells.

NON-CHEMICAL CONTROL STRATEGIES

Indirect control strategies for these pests involve removal of their favored habitat and moisture reduction. Direct control strategies focus on handpicking, trapping, and barriers.

The use of salt, vinegar solutions, or boiling water is not recommended as it can cause plant damage.

Natural Enemies - Toads, turtles, predacious beetles and their larvae, and wild birds all contribute to reducing high populations of snails and slugs.

Habitat Modification - Eliminate shelter and favorable conditions for reproduction by plant thinning, planting ground covers less favored by slugs, and removal of bricks, boards and excessive mulch. Steps that increase air circulation and sun penetration will promote drying of the area, discouraging slugs and snails.

Physical Removal - Picking by hand, or with tweezers or tongs although not an enjoyable task, is a very effective method of immediate control and can last a reasonably long time if combined with other techniques. The best time for handpicking is two hours after sunset. Use a flashlight and place captured slugs and snails in a container of hot soapy water for later disposal.

Traps - Trapping is another successful tactic for control. Overturned flower pots, boards, shingles, inverted grapefruit halves, commercially available slug and snail traps, or just about anything that will provide daytime shelter can be an effective trap. These traps can also be baited with pieces of potato, apple, or lettuce leaves to increase their effectiveness.

Most people are familiar with using shallow containers filled with beer as a method of baiting. Apparently, the yeast is what attracts them, and a simple mixture of any yeast and water will also work. Slugs attracted to beer become tipsy and fall in to drown. Drowned or trapped slugs and snails should be disposed of in hot soapy water. The drawback to this type of trapping is that it requires frequent monitoring and bait replacement.

Diatomaceous Earth-“DE” is an organic product mined from fossilized algae known as diatoms. It is ground into a fine dust for horticultural use. Apply an inch-wide band of DE around plants needing protection. When slugs and snails crawl over the DE dust, it adheres to their bodies, causing desiccation

(drying out). Reapply DE after heavy rains. DE dust can cause irritation, so use goggles and a dust mask during application.

Barriers - The best commercial barriers against slugs and snails are strips of copper that can be fastened around beds, flower boxes, or greenhouse benches. Homemade strips can be made from copper sheeting. Copper screening also works, but is not as durable. The green oxidation of the copper doesn't seem to decrease its effectiveness. Apparently, they have a reaction to the copper similar to an electric shock. Now available is a coconut oil repellent called “Slug Stop”. Sold in a tube, this paste is applied in a barrier circle around plants to be protected. An important point to remember is that barriers will not be effective against slugs and snails already present in the area to be protected. Barriers are also ineffective if plant parts bridge over the barrier material or if they are less than an inch wide.

CHEMICAL CONTROL STRATEGIES

Commercially available controls are incorporated into baits. Metaldehyde baits include pelletized forms such as Bug-Geta and Bug-Geta Plus and liquid forms such as Deadline. With either type, avoid applying directly to foliage. Metaldehyde baits can be used safely around vegetables, fruits, and ornamentals. Methiocarb baits can only be used around ornamentals. They are not labeled for vegetables or fruit. Trade names include Draza and Mesuro. A new bait is now available that is labeled for use around ornamentals and all edible plants. Sold under the name “Sluggo”, the bait contains iron phosphate which degrades readily into the soil.

Both chemical and non-chemical baits can be placed under raised boards to conceal them from children and pets. When using any chemical product, carefully follow the application directions on the label.

Rev. 3/2002

**Do you have a plant or insect pest question?
Visit us at extension.umd.edu/hgic**

Author: David L. Clement, University of Maryland Extension Specialist, Home and Garden Information Center

This publication is a series of publications of the University of Maryland Extension and The Home and Garden Information Center. For more information on related publications and programs, <http://extension.umd.edu/hgic>. Please visit <http://extension.umd.edu/> to find out more about Extension programs in Maryland.

The University of Maryland, College of Agriculture and Natural Resources programs are open to all and will not discriminate against anyone because of race, age, sex, color, sexual orientation, physical or mental disability, religion, ancestry, or national origin, marital status, genetic information, or political affiliation, or gender identity and expression.

For more information on this and other topics visit the University of Maryland Extension website at www.extension.umd.edu