

# FIELD CROPS



CORNELL Cooperative Extension

## Spotted Garden Slug

*Limax maximus* L.

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The spotted garden slug was introduced from Europe during the 1800s. It is the largest slug in the eastern United States. It may be a pest in gardens and is occasionally found in and around the house. The spotted garden slug may become locally abundant during wet years, but it usually has a clumped distribution.

### Identification

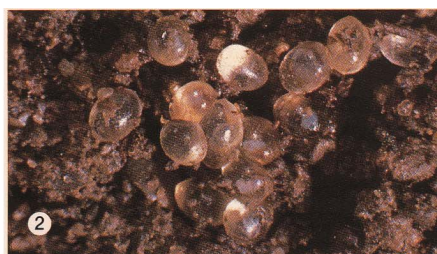
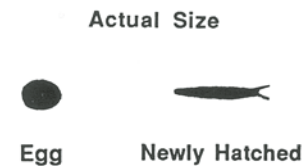
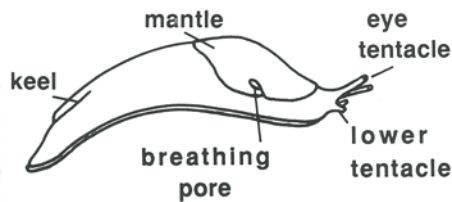
A slug is often described as a snail without a shell, and its morphological features are shown in the line drawing below. The slug has two sets of tentacles on its head. The eyes are on the tips of the upper tentacles. The lower tentacles, which are shorter, are for tasting and smelling. The mouth is located between and below the lower tentacles, and is equipped with a radula, a tooth-covered rasp that the slug uses to grate plant tissue. The

slug glides along a path of mucus that is secreted by the pedal gland, located just below the mouth. The mantle is a fold of skin on the back of the slug. At the edge of the mantle is an opening called the breathing pore or respiratory pore, which can be seen opening and closing rhythmically as air passes in and out. The keel is a ridge down the back of some species of slugs.

The size, color, skin texture, mantle location, position of the breathing pore, presence or absence of a keel, and the color of the mucus are important characteristics for slug identification. The spotted garden slug is from 13 to 18 cm (5 to 7 in.) long when fully grown (fig. 1). It has a brown body with numerous dark spots or blotches, and its slime is clear.

### Biology

Slugs need a certain amount of dampness or humidity to survive. They are usually active at night or when it rains, and spend sunny days under logs or sticks, or in debris such as compost. Many slugs are omnivorous; they may eat a variety of foods such as fungi, dead worms, or dead insects, in addition to green plants.



INK DRAWINGS BY R. McMILLEN-STICHT

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## Life Cycle

Slugs are hermaphrodites, possessing both male and female reproductive organs. An individual may start out as a male, become both male and female, and finally become solely female. Certain species may even self-fertilize, producing viable offspring without mating.

The spotted garden slug mates and lays its eggs chiefly in the fall. It has a unique mating ritual in which the mating pair suspends from a twig on a thread of mucus that may be close to three feet long. After mating, clusters of from one to several dozen clear, jelly-like eggs (fig. 2) are laid under rocks, logs, or leaf litter or in sheltered areas in the soil. The eggs measure approximately 5 mm (0.2 in.) in diameter. Immature slugs resemble the adults, but are smaller (fig. 3). The average life span of the spotted garden slug is from three to four years. All life stages may be found overwintering.

## Damage

Slugs injure plants by chewing holes of various sizes in the leaves and stems (fig. 4). These holes may be in the middle of the leaf or on the edge. Slug damage may be confused with injury caused by caterpillars. Because slugs often feed at night, the only evidence of their presence may be glistening patches or streaks of dried slime seen on the plants and the ground nearby. If caterpillars are present, they can be seen during the day on plants and in soil cracks near the base of plants; caterpillar droppings can be found on crop leaves and on the ground.

## Control

If the area is small – for example, a garden – removing shelter for the slugs can help to control them. The gardener should remove debris, logs, and stones, and trim grass and weeds along the edge of the garden. For high populations, it may be necessary to remove slugs by hand from plants at night. Day-time collection is also possible if the gardener lays a “trap” of boards or shingles on the ground near the most susceptible plants. The slugs will crawl under these at night and can be crushed or removed in the morning.

Other methods of control are to search for egg masses and destroy them; to encircle the most susceptible plants with wood ashes, diatomaceous earth, or even screen to exclude slugs; and to encourage natural enemies of slugs – toads, garter snakes, and predacious ground beetles (fig. 5).

The easiest way to remove slugs in households is by hand. Sprinkling salt on slugs will cause them to dry out and die. Removing leaf litter from around the foundation of the house and sprinkling a band of sand or wood ashes will create a slug-proof barrier.

A molluscicidal bait is more effective than a chemical spray for controlling slugs. The bait works best if applied in the evening when the ground is damp and slugs are active. Further information about molluscicides and slugs can be obtained from local Cooperative Extension agents.