



Slugs in Field Corn

T.A. Jordan, Graduate Research Assistant, Department of Entomology, Virginia Tech

C.A. Laub, Research Associate, Department of Entomology, Virginia Tech

R.R. Youngman, Professor and Extension Specialist, Department of Entomology, Virginia Tech

Scientific Names: *Deroceras reticulatum* (gray garden slug) (Fig. 1), *Deroceras laeve* (marsh slug) (Fig. 2), *Arion subfuscus* (dusky slug) (Fig. 3)

Size: Mature slugs vary in size from 1/2 inch to several inches in length; however, the typical size range of

slugs found in cornfields is about 1/2 to 1 1/4 inches.

Color: Mature slugs are gray to brownish-gray, depending on the species. Immature slugs resemble adults in color (Fig. 4).



Fig. 1. Gray garden slug on corn leaf (courtesy of R. Hammond).



Fig. 3. Dusky slug on surface residue (courtesy of R. Hammond).



Fig. 2. Marsh slugs (courtesy of R. Hammond).



Fig. 4. Immature slug on thumb (courtesy of R. Youngman).

Description: Slugs are legless, unsegmented, soft bodied organisms. The head region has two pairs of retractable tentacles with the larger pair bearing eye spots. The body is covered with a slick film of milky mucus that protects the slug from drying out. Slug eggs are colorless and gelatinous in appearance. The eggs are round to oval in shape and from 1/8 to 1/4 inch in diameter.

Habitat: Slugs can become serious pests in no-till cornfields during spring periods of cool, wet weather. Fields with heavy layers of manure, surface residue, or thick weed cover are at higher risk of slug damage. Slugs prefer a relatively cool environment with high humidity. During hot weather, slugs feed at night and spend the day in soil cracks or under surface residue. Thus, you will rarely see slugs feeding during the day.

Life Cycle: Overwintering slugs become active and lay eggs in early spring. Immature slugs hatch in early spring as soil temperatures begin to warm. Sexually reproductive adults develop by mid-summer, mate, and begin laying eggs in the fall. Eggs typically are laid in clusters of 10 to 20 in soil crevices and under surface residue. Depending on species and regional climate, slugs will overwinter in the egg, immature, or adult stage and emerge the following spring, completing only one generation per year.

Type of Damage: Slug feeding often is the cause of shredded leaves on young corn seedlings (Fig. 5). Irregular size feeding holes and shiny mucus trails on the leaves and stem distinguish slug damage from that of other leaf-feeding insects. In addition, serious slug feeding damage can occur in fields where the seed slot was not fully closed at planting. Slugs will move down into the slot and feed directly on exposed seeds and the emerging stem (coleoptile).



Fig. 5. Slugs feeding on young corn plants (courtesy of R. Hammond).

Control Methods

Sampling: Slugs can be found during the day by turning over clods of dirt and surface residue near injured corn seedlings. Take samples from the area around five consecutive plants in 10 locations of the field to determine the average number of slugs per plant. Populations of five or more slugs per plant at the spike through the third-leaf stage may be economically significant, especially if injury is heavy, plant growth is slow, and cool, wet conditions prevail. During dry, warm weather, 10 or more slugs per plant may be tolerated. In addition, corn seedlings that have reached the third-leaf stage and are in otherwise good condition generally outgrow additional feeding by slugs.

Prevention (Non-chemical): Cultural practices that may help reduce slug populations include reducing the amount of manure applied, shifting to conventional tillage practices for at least one season, and minimum tillage to reduce the amount of surface residue. In addition, delaying planting until daytime temperatures are above 80°F often allows corn to outgrow much of the problem.

Treatment (Chemical): If slug pressure is evident, molluscicidal baits, such as metaldehyde (Deadline M-Ps), are an effective but expensive control option. If slug populations reach damaging levels, baits may be used temporarily to help corn outgrow feeding damage. In fields with a history of slug problems, consider applying baits timed to peak above-ground slug activity. For more complete details on management options for slugs refer to the most recent edition of the *Pest Management Guide, Field Crops*, Virginia Cooperative Extension publication 456-016, www.pubs.ext.vt.edu/pmg/.