

46. Lesser Cornstalk Borer

Wayne N. Dixon and Albert E. Mayfield, III

Hosts

The lesser cornstalk borer (*Elasmopalpus lignosellus*) affects seedlings of Arizona cypress, bald cypress, black locust, dogwood, black tupelo, loblolly pine, redcedar, sand pine, slash pine, and sycamore. Agricultural host plants (more than 60 species) include beans, corn, millet, peas, sorghums, and soybeans.

Distribution

The insect is found from Maine to southern California and southward to Mexico, but damage is most severe in nurseries of the Southern United States.

Damage

Complete girdling results in seedling death. Partially girdled seedlings usually recover. Mortality in Arizona cypress may be increased by infection of wounded seedlings by the fungus *Dothiorella* species.

Diagnosis

Look for wounds caused by larval feeding below to just above groundline (fig. 46.1). Bark may be completely or partially removed for up to several centimeters (fig. 46.2). Girdled seedlings remaining alive may have a gall-like swelling on the stem just above the girdle. Partial girdles on the stem are usually closed by callus formation. Severely damaged seedlings die and may remain upright or fall over (fig. 46.3). The slender larvae of the lesser cornstalk borer are about 2.0 cm long when mature. They are pale green and



Figure 46.1—Feeding wound made by larvae of the lesser cornstalk borer. Photo by Florida Department of Agriculture and Consumer Services, Division of Forestry.

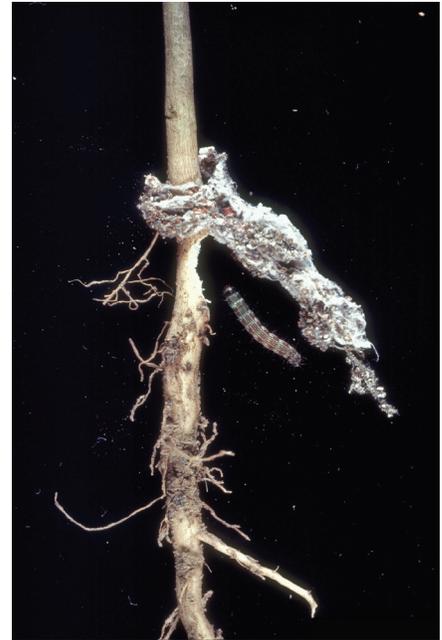


Figure 46.2—Seedling girdled and debarked by lesser cornstalk borer larvae belowground, showing larva and silken tunnels attached to the stem. Photo by James D. Solomon, USDA Forest Service, at <http://www.bugwood.org>.

have brown banding or stripes (fig. 46.4). Silk tunnels, which protect inactive or disturbed larvae, can sometimes be seen radiating from feeding sites (figs. 46.2 and 46.5).

Larvae wriggle furiously when captured, but are difficult to find. Moths may be more readily observed than larvae and are often seen in short and erratic flight patterns just above the seedling tops. They are light- to dark-brownish gray and have a wingspan of approximately 1.6 to 2.4 cm, (figs. 46.6 and 46.7). At rest, female moths are often charcoal-colored and male moths are often tan-colored with charcoal markings.



Figure 46.3—Fallen bald cypress seedling girdled at the groundline by lesser cornstalk borer. Photo by Florida Department of Agriculture and Consumer Services, Division of Forestry.



Figure 46.4—Larva of the lesser cornstalk borer. Photo by Florida Department of Agriculture and Consumer Services, Division of Forestry.

Biology

The lesser cornstalk borer has two to four generations per year. By late summer, most life stages can be found. After emerging from the soil in late spring, moths mate, and female moths deposit eggs singly in the soil at the bases of host plants or on their stems and lower leaves. Each female lays approximately 125 eggs. Eggs hatch within 1 week, and larvae mine the lowermost branches or begin semisubterranean feeding on stems and roots. Larvae feed from 2 to 3 weeks. Pupation occurs in silk tunnels or soil litter and takes 2 to 3 weeks. Then new adults emerge, mate, and live for about 10 days. Larvae or pupae overwinter in the soil or soil litter.



Figure 46.5—Silk tunnels formed by larvae of the lesser cornstalk borer, attached to a soybean plant. Photo by James Castner, Entomology and Nematology Department, University of Florida.

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Figure 46.6—Adult moth of the lesser cornstalk borer, wings folded. Photo by Gretchen L. Grammer, Grand Bay National Estuarine Research Reserve.



Figure 46.7—Adult moth of the lesser cornstalk borer, wings extended. Photo by James T. Vargo.

Control

Cultural

Certain cover crops (for example, soybeans, pearl millet, peanuts, sorghum, peas, and certain grasses), sandy soils, and droughty weather encourage infestations in forest nurseries. Practice general sanitation measures. Fall or winter cleanup of plant residue, early cover crop disking, and unsusceptible cover crop rotation may help reduce the incidence of lesser cornstalk borer.

Chemical

To prevent lesser cornstalk borer incidence, granular insecticides can be applied to the soil when the cover crop is planted. The insecticide used will depend on the cover crop. A remedial, supplementary treatment may also be required. A liquid insecticide formulation may be applied as a soil drench at the first sign of seedling damage. Due to the protective silken tunnels, additional applications may be needed to ensure the larvae are adequately exposed to the insecticide.

Selected References

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