Agricultural Extension Service
The University of Tennessee
SP 290-Q

Insects

Boxwood Leafminer

Frank A. Hale, Associate Professor
originally developed by Jaime Yanes Jr., former Assistant Professor
and Harry E. Williams, Professor Emeritus
Entomology and Plant Pathology

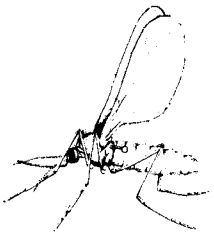
Boxwoods were brought into the United States in the 1800s. With the introduction of this plant came the boxwood leafminer, *Monarthropalpus flavus (=buxi) Schrank.*

The boxwood leafminer is considered to be the most serious pest of boxwoods. It occurs from the Atlantic to the Pacific, wherever boxwoods grow. All varieties of the boxwoods are attacked; however, the slower-growing English varieties are less susceptible than the American varieties.

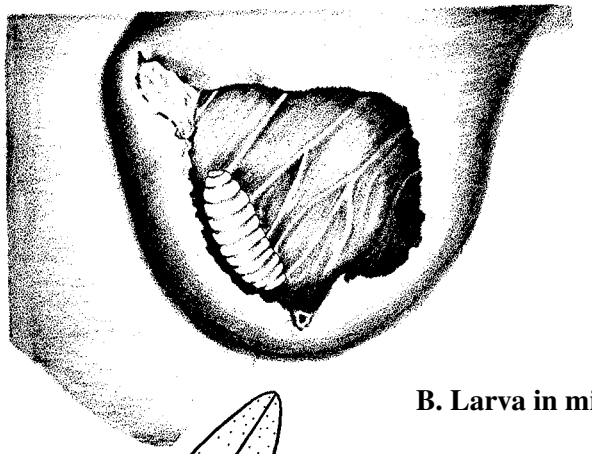
This pest mines in the foliage by feeding between the upper and lower leaf surfaces. Mining activity results in the formation of small blisters on the undersides of the leaves. Infested leaves become yellowish and are smaller than uninfested leaves. Heavily damaged plants become unthrifty in appearance. The adult leafminer is a yellow-to-orange-red fly that resembles a mosquito. Adults are usually seen swarming around boxwoods about the time weigelas bloom. The larva is a small (1/8 inch long), legless, lemon-yellow maggot.

The boxwood leafminer overwinters as a partially grown larva in the leaf blisters. When the weather warms up in the spring, the larva becomes active, grows rapidly, then pupates. The pupa darkens prior to adult emergence. At adult emergence, the pupal skin is forced partly out of the mine, where it hangs for several days after the fly emerges. Adults appear for about a two-week period after boxwoods put on new growth in the spring. Females soon begin inserting eggs into leaves. Eggs hatch in about three weeks.

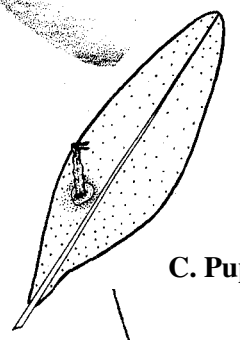
Boxwood leafminer



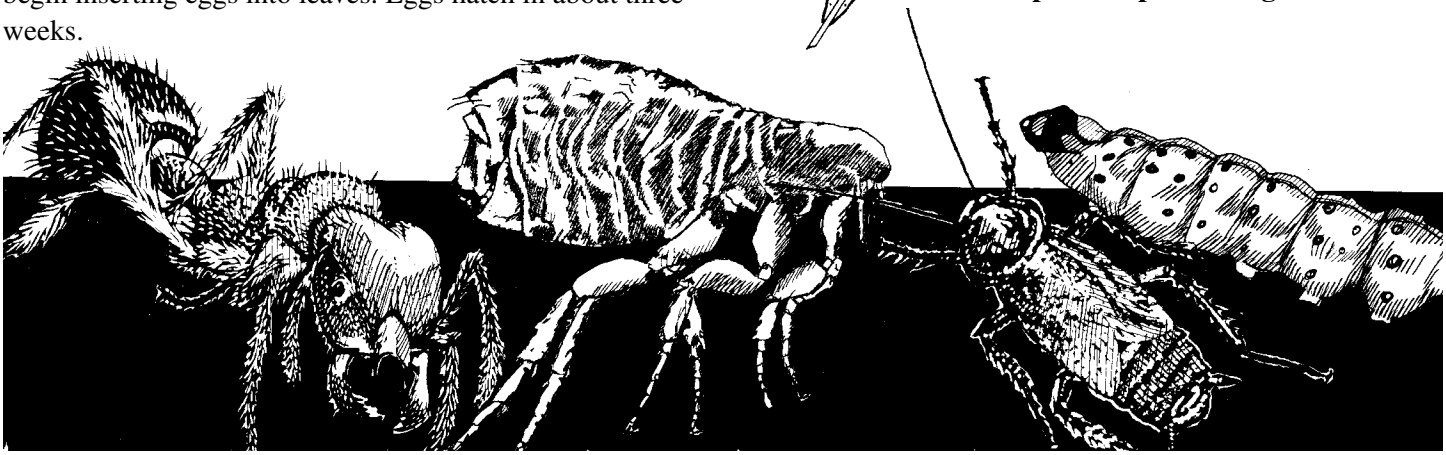
A. Adult



B. Larva in mine



C. Pupal skin protruding from leaf



Larvae begin their mining activity in the leaves. Infested leaves may have yellow spots and drop prematurely. Blistered leaves are seen from mid-summer until the following spring. Serious infestations result in dead twigs or may weaken the plant, making it susceptible to disease or winter damage.

Control Measures

In February to early April, imidacloprid (Merit 75WP [75% WP], Merit 2 [2 lb./gal. F], Marathon 60WP [60% WP], Marathon II [2 lb./gal. F], or Advanced Garden Tree and Shrub Insect Control [1.4% concentrate]) can be applied as a coarse spray or drench to the soil around the shrubs. This systemic insecticide will be active against the new leafminer larvae occurring in May.

In April, or about the time weigelas bloom, look for the pupal skins protruding from the underside of the leaves and the adult boxwood leafminer flies inserting eggs into the leaves. Treat the adults with dimethoate (Dygon 400 [4 lb./gal.EC], Dimethoate 2.67EC [2.67 lb./gal. EC]), carbaryl (Carbaryl 80S [80% WP], Sevin [2 lb./gal. EC], carbaryl 4L [4 lb./gal. F]), malathion (Malathion 5EC [5lb./gal. EC], Malathion 50% EC [4.4 lb./gal. EC]), chlorpyrifos (Dursban 50W [50% WSP]), acephate (Orthene [9.4% EC], Orthene Turf, Tree and Ornamental Spray [75%WP], Address T/O [75% WP] or trichlorfon Dylox 80 Turf and Ornamental Insecticide [80% SP].

A foliar spray using Dygon 400, Dimethoate 2.67 EC, Merit 75 WP, Merit 2, Marathon II, 0.72% cyfluthrin plus 0.72% imidacloprid (Advanced Garden Rose and Flower Insect Killer), or Orthene should be applied in mid-May (about 3-4 weeks after adults emerge) to control larvae developing in the new leaves.

Visit the Agricultural Extension Service Web site at
http://www.utextension.utk.edu/

SP290-Q 1M 6/03 (Rev) E12-4615-00-034-03