

At ArborLawn, one of our primary goals is to further the knowledge of our customers. This information will give you a better understanding of the needs of your trees so you will be able to make more informed decisions regarding their care.

## ***PINE SHOOT BORER***

### **European Pine Shoot Moth**

European pine shoot moth (*Rhyacionia buoliana*) is an important pest of pines. It was originally imported on nursery stock from central Europe around 1914. The moth moved westward from Long Island, New York and by early 1950s it was widespread in North America.



Damage is done by larvae that bore in shoot and bud tissue.

Attacks frequently occur in young trees. Killed terminals cause bushy growth that may render nursery plants unmarketable or landscape plants unattractive. All pines are attacked but two-needle pines such as lodgepole, mugo, and Scotch pine appear to be especially susceptible. Pines also may differ in their ability to recover from damage by this insect.

Adults emerge in early summer. The exact date depends on spring temperatures. Warm spring temperatures permit an earlier emergence whereas a relatively cool spring delays the emergence flight. Female moths lay eggs on host pines that may be scattered over a large area. In other words, EPSM is a relatively strong flier and can therefore effectively disperse its eggs. Eggs hatch in one to two weeks at which time the new larvae begin feeding. Needles are mined first, and then buds. Larvae spend the winter under a resin/silk shelter or in buds. The following spring, larvae migrate upward and feed on new buds or expanding shoots. Developing shoots are tunneled and killed. Pupation (the change from larva to adult) occurs in shoots and takes two to three weeks in late spring. There is only one generation per year.



## Eastern Pine Shoot Borer

### Eastern Pine Shoot Borer

**Species:** *Eucosma gloriola* Heinrich

**Distribution:** Northeastern North America

#### Hosts:

Prefers white and Scotch pines; recorded from Austrian, pitch and red pines and Douglas-fir.

#### Damage:

This pest usually kills shoots which are more elongate than the ones attacked by the shoot moths. The damage also looks like some of the tip-blight diseases, but the larval exit hole is an obvious distinguishing character. Often the shoots wilt or break after the larvae are gone.



Eastern pine shoot larva inside pine shoot

#### Description and Life Cycle:

This pest is often mistaken for the pine shoot moths (e.g., European pine shoot and Nantucket pine tip moths). However, this moth has larvae which bore into newly developing terminal shoots rather than small buds. The larvae also hollow out the shoots *without* making pitch covered webs at the bud bases. Hollowed shoots often break in the wind rather than just wilting.

This pest spends most of the year, from July to April, as a pupa resting in a loosely woven, light-brown cocoon in the pine needle duff under trees. In late April and early May, the ½-inch long, red-brown and buff-colored moths emerge. After mating, the moths lay eggs near the expanding buds. The larvae hatch in about a week and crawl up the buds and chew a hole and bore into the pith area. Once inside, the brown larvae feed up and down the shoot from near the tip to within one inch of the base. The larvae are mature by late June, at which time they chew an exit hole and drop to the ground. They quickly form a cocoon and remain dormant until the next year.