

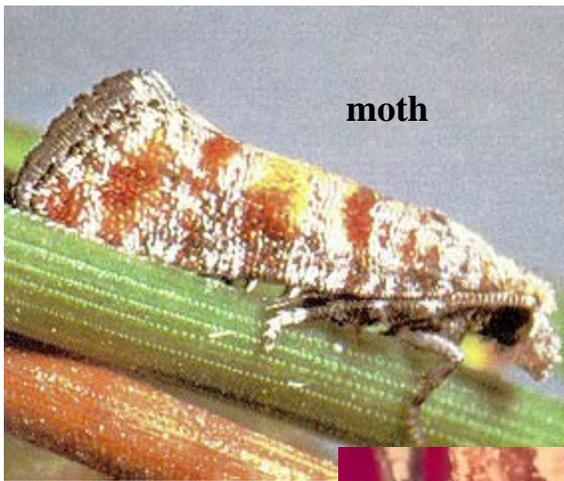
**moth**



**damage**



**pupa**



**moth**



**damage**



**pupa**

## Nantucket pine tip moth

*Rhyacionia frustrana* (Comstock)

This bud and shoot borer occurs throughout the East and South. Most species of pines are attacked, except longleaf and eastern white pine. Greatest economic losses result from retarding the height growth and deforming the main stems of trees in plantations. In pine seed orchards this pest kills female flowers and conelets.

Young larvae are cream colored with black heads. Mature larvae are light brown to orange and about 2/5 inch (9 mm) long. The head, body, and appendages of the moth are covered with gray scales, while the forewings are covered with patches of brick-red and coppercolored scales.

Tip moths injure the growing shoots of young pines. Larvae bore into and feed on inner tissues of buds and shoots. Shoot injury occurs primarily during the first 5 years and decreases as crowns close. In seed orchards, boring frass, on the conelet surface and dead stalk, is the first indication of attack.

This pest overwinters as a pupa, and adults emerge in late winter or early spring. Mating and egg laying occur shortly after emergence. Early larvae feed on needles and surfaces of new growth, while later larvae move to shoot tips and begin boring into buds or stem tissues. Pupation occurs within damaged shoots. There are 2 to 5 generations per year.

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