



Pine shoot beetle

Tomicus piniperda

Order Coleoptera, Family Scolytidae;
bark or engraver beetles
Introduced pest

Host plants: Pines

Description: Adult beetles are 3–5 mm long and cylindrical. They have a shiny black head and wing covers that vary from reddish-brown to black. Larvae are legless, curled, white with brown heads, and reach 5 mm in length.

Life history: Adults burrow into pine stumps, logs, or trunks of weakened trees in early spring. Females deposit eggs in April in vertical egg galleries, and die. Larvae develop within the galleries, exit in May or June as adults, and fly to crowns of trees, where they feed on the central portion of lateral shoots. There is one generation a year.

Overwintering: Adults under or within bark at the base of living trees.

Damage symptoms: Adults undergo “maturation feeding” during the summer. They burrow into pencil sized twigs and tunnel through the pith. A 2 mm diameter pitch mass is formed, where they enter the tree. Attacked branches suddenly wilt or turn brown and flag. Due to the rapid removal of dead trees in the landscape, this beetle is not a common landscape pest. However, it is a quarantine pest in nursery and Christmas tree production.

Monitoring: Look for damaged shoots on Scotch pine in mid- to late-summer, when adults are feeding on live trees.

Physical control: Place freshly cut pine logs or last fall's Christmas trees in pine field. Beetles will fly to freshly killed logs, or stumps to breed. In May, remove and destroy all infested logs. They contain larvae that will become new brood adults. From June to September, remove and destroy infested tips.

Cultural control: The best strategy to pass quarantine inspection is to use a summer foliar spray in combination with either the February spray or the destruction of brood logs and culled Christmas trees during May. Infested trees cannot be moved from infested counties.

Chemical control: In February, treat all freshly cut stumps or logs with permethrin or carbaryl before adult mating flight on the first warm day in spring (above 53 degrees). Alternatively, use EC formulation of permethrin or XLR formulation of carbaryl at bark beetle rate. From June to July, treat shoots with permethrin.

Biological control: In the Midwest, a complex of parasitoids and predators contribute to population management. In the US, a predaceous clerid beetle, *Thanasimus formicarius*, is being reared for release (Van Driesche et al. 1996).



Pine terminal damage caused by pine shoot beetle. (198)
Photo: Cliff Sadof



Pine shoot beetle adults; note the various colors. (199)
Photo: John Davidson

Plant Mortality Risk: Low. Quarantine pest, please contact your Department of Agriculture.

Biorational pesticides: None

Conventional pesticides: chlorpyrifos (nursery only), bifenthrin, permethrin