

Eastern Spruce Gall Adelgid, *Adelges abietis* (Linnaeus)

Homoptera: Adelgidae

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The eastern spruce gall adelgid, a European pest introduced into the United States before 1900, is now established in the northeastern United States and eastern Canada. It is common in Pennsylvania where it is sometimes confused with another pest of spruce, the Cooley spruce gall adelgid.

Hosts and Distribution: This species is found throughout our state and the entire Northeast. It is primarily a pest of Norway spruce, although it sometimes infests Colorado and white spruce. Unlike the Cooley spruce gall adelgid it has no alternate host and spends its entire life cycle on spruce.

Identification: Galls formed by the eastern spruce gall adelgid are small, short, pineapple-shaped growths found at the bases of twigs of Norway spruce (Fig. 1). The galls are usually less than 1 inch long, are green when alive, but turn brown when the galls open and the insects emerge. The insects overwinter as tiny gray female nymphs at the bases of the needles. When they mature and lay their eggs they secrete a tiny tuft of white "wool" that can be seen on the stems.



Fig. 1. Unopened gall of eastern spruce gall adelgid at base of Norway spruce twig.

Life History: This insect overwinters as an immature female, but in early spring she matures (Fig. 2) and begins to lay eggs at about the time of bud break. Each female lays more than 100



Fig. 2. Maturing eastern spruce gall adelgid females near bud of Norway spruce.

eggs, which are surrounded by a coat of white, cottony wax filaments. The nymphs hatch in about one week and begin feeding on the needles. Their feeding causes the needle bases to swell and coalesce, forming the characteristic gall. The nymphs live and develop inside the galls (Fig. 3) until late summer (Fig. 5) when the galls crack open and the nearly mature nymphs emerge and settle on the needles. Here they become adults and lay their eggs. When these hatch, the resulting nymphs settle near the buds and overwinter, completing the cycle.



Fig. 3. Eastern spruce gall adelgid nymphs inside immature (green) gall.



Fig. 5. Late summer condition of opened gall.

Damage: The biggest problem with eastern spruce gall adelgid is that the galls weaken the twigs and make them more susceptible to breakage. If the infestation is heavy enough, the dead galls lend a gnarled look to the branches (Fig 4). Rarely does this insect do more than lower the aesthetic quality of trees.



Fig. 4. Norway spruce branches dying as a result of eastern spruce gall adelgid feeding damage.

Control: Control is much like that for Cooley spruce gall adelgid. Spray with a currently registered insecticide in late September or October and/or again in early April to kill the overwintering nymphs. These insects cannot be controlled while they are inside the galls.

¹ Revised 2002, R. Lehman and J. Stimmel.