



Cooley spruce gall adelgid

Adelges cooleyi

Order Hemiptera, Family Adelgidae;

pine and spruce adelgids

Native pest

Host plants: Forms galls on Colorado blue spruce and Engelman spruce, but alternates its life cycle on Douglas-fir. However, it does not require two hosts to complete its life cycle, but may cycle continuously on spruce or Douglas-fir.

Description: Adelgids are closely related to aphids and infest pine and spruce. Both winged and wingless adult females are approximately 1 mm long and dark brown to black. Adults on Douglas-fir secrete white, curled strands of wax that cover their bodies.

Life history: After emerging from the gall on spruce, winged adelgids fly to Douglas-fir in mid to late summer, and deposit eggs. No galls are produced on Douglas-fir. A winged generation of adelgids then develops on Douglas-fir. These adelgids fly back to spruce in the fall and lay eggs that produce the overwintering population. These overwintering females then lay eggs in spring that produce the gall-forming adelgids. Galls are 4–6 cm long, cone-shaped, and initially green-purple. They change to brown as they dry. Some populations have continuous generations on spruce or Douglas-fir.

Overwintering: Immature females under waxy covers at the base of needles.

Damage symptoms: Cone-shaped galls occur at the tips of the new growth on spruce. The galls turn brown in summer. Douglas-fir needles become yellow and distorted.

Monitoring: Eggs hatch when common lilac blooms in the first two weeks of May (Herms). Use sticky traps in late summer to detect flying adults. Look in late winter at the base of needles for wax-covered nymphs overwintering. Look in spring for galls forming. Look for white covered adults on Douglas-fir.

Physical control: Prune out green galls in spring or early summer and destroy them. For aesthetics, prune out remaining brown galls in summer.

Chemical control: Sprays can be used to kill overwintering females in late fall. It is difficult for pesticides to penetrate waxy covering on females on Douglas-fir. Spray the underside of new branches.

Biological control: Lacewings, predatory bugs, and fungi.

Plant mortality risk: Low

Biorational insecticides: horticultural oil, insecticidal soap

Conventional pesticides: carbaryl, chlorpyrifos (nursery only), deltamethrin



Discoloration and distortion of Douglas-fir leaves caused by Cooley spruce gall adelgid in the spring. (65)

Photo: Cliff Sadof



Galls on spruce caused by Cooley spruce gall adelgid. (65)

Photo: John Davidson



Close-up of galls caused by Cooley spruce gall adelgid feeding on terminal end of a spruce shoot. (66)

Photo: John Davidson



Cooley spruce gall adelgid (continued)



Cooley spruce gall adelgid adult female on Douglas-fir. (68)
Photo: John Davidson



Cooley spruce gall adelgid eggs on Douglas-fir with wax removed. (70)
Photo: John Davidson



Cooley spruce gall adelgid adult female and egg masses with waxy covering on Douglas-fir. (69)
Photo: John Davidson



Yellow sticky trap for monitoring Cooley spruce gall adelgid adults. (71)
Photo: Charles Cornell