

# Eastern & Cooley Spruce Gall Adelgids

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A decorative, stylized white letter 'W' on a black square background, serving as a drop cap for the first paragraph.

hat are adelgids? The damage these insects cause to spruce is what most people are familiar with. The small pineapple-shaped growths are easy to spot. They can be found near the ends of the branches most any time of the year. These woody growths are galls caused by either the Eastern spruce gall adelgids or Cooley spruce gall adelgids. Treatment, if warranted, will depend on the time of year, amount of infestation, species and location of the tree.

The key to treatment is a good diagnosis of the situation and a good understanding of the adelgid life cycle. Adelgids have complicated life cycles that cause damaging galls to form which cause twig dieback. Adelgids can infest all spruce. The galls rarely result in death, but will weaken, and when numerous, can seriously stunt or disfigure a tree.

The damaging galls caused by either adelgid species are similar. Cooley spruce gall adelgids cause larger galls on the branch tips. The Eastern spruce gall adelgid primarily attacks Norway spruce, but can damage Colorado and white spruce. It produces a slightly smaller gall at the base of lateral and terminal shoots which eventually die. It is especially important to control adelgids where spruces are used as screens or specimen trees. It is recommended to treat trees for at least three years for good control.

Very small females of the Eastern spruce gall adelgid will overwinter at the base of buds. Then, as the buds begin to swell, she feeds and matures. She lays 100 to 200 eggs, then dies, covering them with her body and wax-like, white, woolly fibers.

The eggs hatch within 10 days, the nymphs begin feeding on new needles for a few days, then move to the base of the needles. The continued feeding of the nymphs causes galls to form around the nymphs. In mid to late summer, the galls turn brown and the chambers open to release mature nymphs which form winged female adults. These females fly to other spruce or stay on the same tree and lay egg masses. Eggs hatch by late October to produce a non-gall-producing generation of nymphs to overwinter and start the cycle again.

Cooley spruce gall adelgids are similar, but have five different morphological forms requiring two years and two hosts to complete their life cycles. They cause galls to form primarily on Colorado blue spruce. Cooley uses Douglas fir as an alternate host, where a gall is not produced, but needles can be bent, deformed or turn yellow, and possibly drop off. These galls can attack Douglas firs so seriously, the trees can appear covered with light snow. These adelgids may produce continuous generations on either spruce or Douglas fir and move from host to host. When both hosts are present their numbers will build up with even greater damage.

The key to treatment is a good diagnosis and understanding of their life cycle. Control of adelgids depends on being able to identify the different morphological forms and calculate when the vulnerable stages will occur. Allow a Wachtel Certified Arborist to examine your trees so we can recommend a treatment plan which will be best for your situation.