



Cooley and Eastern Spruce Gall Makers

Colorado and White Spruce



Photo, top right: Newly formed galls. **Above:** Spruce gall adelgid – Photo - University of Vermont. **Below:** Cooley spruce gall on Colorado Spruce – Photo - Colorado State.

What are Cooley and Eastern Spruce Gall Makers?

Cooley and eastern spruce galls are caused by close relatives of aphids, called adelgids. A plant gall is an abnormal plant tissue growth caused when an adelgid injects a hormone into the tree bud. The gall provides food and shelter for the insect. Although most galls are considered cosmetic, in the case of spruce they may kill the ends of the branches they infest. A heavy infestation creates tree stress that can lead to more serious problems.



Biology

The lifecycle of the spruce gall maker takes about one year to complete. Females overwinter on the current year's twigs, laying eggs in the spring. Eggs hatch and move to the needle bases to feed and form galls. Nymphs molt three times in the gall and emerge in August and September. These mature nymphs crawl to the needles and molt into winged females, lay eggs, and die. The eggs laid become the next year's generation.

Susceptible Trees

Colorado and white spruce are common hosts of these gall makers, and they can also affect other spruce and pines. Douglas fir can be an alternate host to this insect; however, galls are not formed on these trees.

Signs and Symptoms

Spruce galls look like small pineapple-like structures at the ends of twigs. They can either be green if they are new or brown if they are 1 or more years old. These growths are often visible on the tree for up to 5 years after the insects have left them.

Cooley and Eastern Spruce Gall Makers Treatment Strategy



Small infestations of spruce galls are not necessary to treat; however, large infestations can disfigure the tree and cause die-back of branches.

Treatment Strategies

Xytect™

The complexity of adelgids' life cycle made management of them especially difficult; however, with new technology using systemic insecticides, this insect is easy to control because sprays no longer have to be timed to the emergence of the young nymphs. The systemic insecticide Xytect™ is effective and can be applied at virtually any time of the year, as long as the ground is not frozen or water saturated. The treatment involves mixing Xytect™ in a watering can and pouring it around the base of the tree. Mulch and leaf litter must be scraped away before application. Xytect™ will stick to these materials and not be available to move into the tree.

Xytect™ is applied to the soil and has a long residual (1 year); however, it usually will take 30 – 60 days for the product to reach the leaves. Professional arborists will often apply Xytect™ in the fall of the year for control the whole next season. Early spring applications are also very effective.

Spray products (Up-Star® Gold)

Spray products, such as **Up-Star® Gold**, are not used very often anymore for larger trees as there are issues with drift and contact with beneficial insects. They are however still used on smaller plants that are easily treated with a hand sprayer. These products typically have a residual of 10 – 14 days and should be applied to coincide with egg hatch and crawler emergence to be effective.

DIY Shopping List

Option 1:

Application Type – Soil drench, Soil injection

DIY Product/Equipment Needed

- Xytect™
- Measuring or diameter tape
- Gloves
- Soil Drench: Bucket or watering can
- Soil Injection: HTI Soil Injection Kit



Option 2:

Application Type – Foliar spray

DIY Product/Equipment Needed

- Up-Star® Gold
- Hand pump sprayer with wand
- Gloves/Safety glasses

