



Bucks Country Gardens

Pest Alert Cooley Spruce Gall Aphid (Adelgid)

DESCRIPTION

In the northeastern United States, the most important hosts of the Cooley Spruce Gall Aphid (Adelgid) are Colorado Blue Spruce and Douglas-Fir, which are grown as landscape ornamentals and as Christmas Trees. They also will attack Engelmann Spruce, Sitka and Oriental Spruce.

LIFE CYCLE

The Cooley Spruce Gall Aphid (Adelgid) has a complicated life cycle which involves five biological forms of the insect, three of which occur on Spruce and two on Douglas-Fir. It requires at least two years to complete all five forms on both hosts. The pest can thrive on Douglas Fir alone by continuous reproduction of the two forms with as many as five to six generations produced each year. However, it appears that those forms occurring on Spruce can not continue producing indefinitely and need to find the second host Douglas Fir, to complete the entire life cycle. On Spruce, Cooley Spruce Gall Aphids (Adelgids) overwinter as immature females at the base of terminal buds. Females resume feeding in the spring, mature and lay several hundred eggs on the lateral terminals. Eggs hatch in 10-14 days into young nymphs, which migrate to new growth and feed at the base of the needles. Their feeding causes a gall, which soon surrounds them. The insects remain in the chambers inside gall tissue through the summer. By mid-Summer, the galls brown, dry out and the Aphids (Adelgids) emerge from the opened chambers. Then they migrate to Douglas Fir or remain on Spruce. On Douglas Fir, the migrating females lay eggs on the needle tips and one generation of Woolly Aphids (Adelgids) is produced. The following Spring adults mature and produce winged and wingless females. The winged females return to the Spruce to start the cycle over while the wingless females remain on the Douglas Fir and reproduce indefinitely.

DAMAGE

On Spruce twigs, terminal galls are formed in response to feeding by the Aphids (Adelgids) and when infestations are heavy the resulting bud destruction destroys the shape of the tree. On Douglas Fir, infested needles appear to be covered with snow. No galls are formed on Douglas Fir, but feeding by the insects on the underside of the needle causes needle discoloration, needle distortion and premature needle drop.

CONTROL NON-CHEMICAL

Removing green colored galls during June or July before adult Aphids (Adelgids) emerge is practical for light infestation on a few trees. Be careful not to get any plant resin in your eyes.

CONTROL CHEMICAL

Formulations of carbaryl (Sevin) and insecticidal soap (M-Pede, Insecticidal Soap) are labeled for Cooley Spruce Gall Aphid (Adelgid) control. Apply horticultural spray oil (Sunspray 6E, Sunspray Ultra Fine Spray Oil) as a dormant treatment.*

Select and apply horticultural spray oil before new growth starts and before buds separate into clusters. Make dormant season applications while temperatures remain above freezing. Horticultural spray oil removes glaucous (blue) color from evergreens such as Colorado Blue Spruce and Koster Spruce. To control overwintering Adelgids on Spruce, apply a registered Insecticide from mid-September through October or just before buds break in April. Repeat applications may be necessary. Follow all label directions for specific information on host plant label clearance, phytotoxicity information, safety precautions and dosage information.

*See Woody Ornamental Insect, Mite and Disease Management, The Pennsylvania State University (1995) for more details.

Warning: Pesticides are poisonous. Read and follow directions and safety precautions on labels. Handle carefully and store in original labeled containers out of reach of children, pets, and livestock. Dispose of empty containers right away, in a safe manner and place. Do not contaminate forage, streams or ponds.

For professional assistance with tree and shrub problems, contact Keystone Tree Experts at (215) 348-4444