



Ornamentals

Spruce Gall Adelgids

Pest Fact Sheet **38**

Introduction

Most spruce trees are damaged by one of two species of adelgids, the Eastern spruce gall adelgid (*Adelges abietis* L.) and the Cooley spruce gall adelgid (*Adelges cooleyi* Gill.). With their sucking mouthparts, these adelgids feed on plant juices, causing an irritation. The plant tissue develops into cone-like galls characteristic in form and shape for the aphid species involved. Continued infestations will disfigure ornamental and Christmas trees, weakening them and making them subject to attack by other pest organisms.

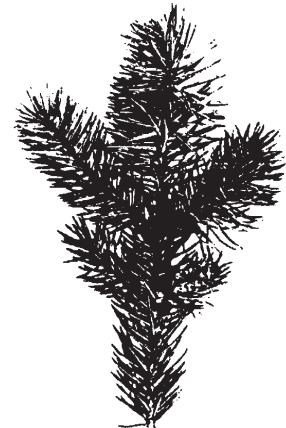
Description and Life Cycle

Eastern Spruce Gall Adelgid: Galls cause by this insect occur mostly on Norway, white black and red spruce trees. An infestation does not spread rapidly from one tree to another. It is not unusual to find specific trees in a planting rather heavily infested year after year while others of the same species may escape injury. There is also a wide range of resistance to this insect within the same tree species.

The Eastern spruce gall adelgid lives during the winter as an immature female, usually located in a crevice at the base of a spruce bud. It begins feeding in early spring and in May deposits a mass of eggs covered with waxy threads. The eggs hatch when the shucks break away from the bud and expose the new needles. The newly hatched adelgids crawl into the mass of new needles to feed. The swelling needle bases develop into a compact mass and form the pineapple-shaped gall. Each gall has many individual cells, inhabited by many adelgids. In late September, the cells open and the adelgids escape. These escapees produce the individuals which live through the winter.

Cooley Spruce Gall Adelgid: Galls caused by the Cooley spruce gall adelgid occur on Colorado blue spruce, Sitka spruce and Engelmann spruce. The galls are somewhat larger than those caused by the Eastern spruce gall adelgid and occur on the tips of twigs. The growing gall varies from light green to dark purple. It may be 1" to 2" in length and 1/4" to 1/2" in diameter.

When it remains on spruce, the life history of this adelgid is similar to that of Eastern spruce gall adelgid. However, some of the mature adelgids emerging from a gall in July or August fly to



Adelges cooleyi, on blue spruce



Adelgis abietis, on spruce

Douglas fir to lay eggs. The eggs hatch into young adelgids which live during the winter on fir and produce a new brood in the spring when growth appears. These feed on the new growth and cause distortion but do not form galls. This adelgid does not need both hosts to complete its life cycle but is more serious when both hosts are present. Do not grow Douglas fir and spruce together.


Summary

	Eastern Spruce <u>Gall Adelgid</u>	Cooley Spruce <u>Gall Adelgid</u>
Damaging stage	Young & adult	Young & adult
Plant parts attacked	New shoots	New shoots
Overwintering stage	Immature female	Young on Douglas Fir or immature female on Blue Sp.
Number of generations per year	One	One
Time of year when damage is done	Early Spring - Summer	Spring - Summer
Number of applications per year	One or Two	One or two
Best time to treat	Bud-swell	Bud-swell

UNH Cooperative Extension County Office Telephone Numbers

Belknap (603) 527-5475	Carroll (603) 539-3331	Cheshire (603) 352-4550	Coos (603) 788-4961	Grafton (603) 787-6944
Hillsborough Goffstown (603) 641-6060	Merrimack (603) 796-2151	Rockingham Brentwood, NH 03833 (603) 679-5616	Strafford (603) 749-4445	Sullivan (603) 863-9200

***Stop!** It is always the pesticide applicator's responsibility, by law, to read and follow all current label directions for the specific pesticide being used. If unsure of registration status of a particular pesticide product, contact the NH Division of Pesticide Control at (603) 271-3550. Store pesticides in their original containers in a locked cabinet or shed away from food. Dispose of unused pesticides or empty containers safely, according to NH regulations. If you suspect pesticide poisoning, call the New Hampshire Poison Control Center at 1-800-562-8236.*


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