



Norway Spruce Shoot Gall Midge: A New Pest of Norway Spruce

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Introduction: “Norway spruce shoot gall midge” (NSSGM, *Piceacecis abietiperda*) is a gall midge (fly) native to Europe and first discovered in the US in 1983 (CT). It has also been found (so far) in NY (Syracuse, Hudson Valley region, Long Island), VT (Dorset), NJ (Randolph), MD (Timonium), and western MA primarily in landscape plants. Reports of damage, sometimes severe, to Norway spruce have increased in recent years. This pest should not be confused with the related native “white spruce gall midge,” which is found only on white spruce.



Signs and Symptoms: NSSGM attacks twigs of Norway spruces with associated dieback or thinning foliage on terminals (last year's growth) (1). Twigs may also be bent or distorted. The larvae develop within small blister-like galls within bark beneath the previous season's bud scales or elsewhere on twigs. Dieback can sometimes be extensive over the plant and damage may be



confused or occur with that caused by needlecast disease. *Phomopsis* sp. has been found in infested twigs and dead larvae, but it is not known whether the fungus plays a role in loss of needles or dieback.

Check the base of the most recent year's shoots showing dieback for slightly swollen bud-like galls in twigs under old bud scales.

One to several bud-like galls may be present. The galls may occur elsewhere on twigs causing distortion. The galls are hollow inside and may have yellowish larvae or pupae present (2). Emerging adults leave exit holes (3). Use at least 10X magnification when examining twigs for galls.

Photo L. Graney

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Identification and Biology: Adults (4) are small (to 2mm, wing length 2 – 2.4mm) flies with distinctive reddish abdomens and fringed wings. Little is known about their biology, but they may be active around early April to mid-May (probably when temperatures ≥ 55 - 60F). Watch for small gnat-like flies active around infested plants. Larvae overwinter in galls and are full grown in early fall. In Germany pupae were found in early to mid-April with adults emerging about 2 weeks later in late April to early May. Eggs are laid between bud scales or near needles on young shoots. There appears to be one generation annually. Submit samples to a diagnostic lab for identification.

Hosts: Norway spruce (*Picea abies*) is the primary host. There is a single report of NSSGM in Colorado blue spruce (*Picea pungens*) growing near infested Norway spruce. A similar species, 'white spruce shoot gall midge' (*Piceacecis tsugae* = *P. piceae*) prefers our native white spruce (*Picea glauca*).

Controls: There are no known effective insecticides and no controlled trials have yet been done. Several contact-type insecticides are labeled for midges or gall midges and may be effective applied as foliar applications at or just prior to adult fly activity, but timing can be difficult. Soil- or trunk-applied systemic treatments with neonicotinoid insecticides have not been effective so far in unreplicated tests. Pruning and destroying affected branches prior to adult emergence may help remove much of the population. Improving air circulation may help reduce damage, as some have observed greater injury on the leeward sides of plants or those growing in areas of limited air movement.

Other resources

Additional photos

Plant Parasites of Europe: leafminers, galls and fungi: *Piceacecis abietiperda* (Henschel, 1850)

<https://tinyurl.com/NSSGM>

Connecticut Agriculture Experiment Station Fact Sheet

Hiskes, E. 2017. Norway Spruce Shoot Gall Midge, (*Piceacecis abietiperda*) (Diptera: Cecidomyiidae).

<https://tinyurl.com/CT-NSSGM>

Reference

Gagné, R. J. and L. Graney. 2014. *Piceacecis* (Diptera: Cecidomyiidae), a new genus for a non-native pest of Norway spruce from Europe and its North American relative. Proc. Ent. Soc. Wash. 116(4): 378-393.

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