



BALSAM GALL MIDGE
Paradiplosis tumifex Gagne

Insect and Disease Laboratory • 168 State House Station • 50 Hospital Street • Augusta, Maine • 04333-0168

Symptoms and Damage

The balsam needle gall midge is often a serious pest of balsam fir which can economically affect the Christmas tree and wreath industries. Feeding of the young midge larvae on developing needles causes the formation of galls or swellings near the bases of the needles. The galled needles tend to drop prematurely, thinning out the foliage on the tree. Severely infested Christmas trees have reduced aesthetic value and may not be marketable for 2-4 years, until the damage can be sheared off or new growth can mask the damage. Forest trees suffer little permanent damage.

Hosts

Balsam fir and Fraser fir.

Life Cycle and Habits

Eggs are laid in the developing new shoots shortly after budbreak in mid- to late May. Trees with late breaking buds are less susceptible to gall midge attack since buds are still tight when adult midges are ovipositing. The young larvae feed at the base of developing needles causing needle tissue to grow around the tiny orange larvae. In heavy infestations, three or more galls on one needle are not uncommon. From mid-September to late November the mature larvae leave the galls and drop to the ground where they spend the winter in the litter. The larvae transform to pupae in May. Adult females emerge as tiny orange mosquito-like flies which mate and lay eggs in the new shoots to repeat the cycle.

When first formed, the galls or swellings on the needles are green in color, but toward mid-summer the galls turn yellow and eventually in late autumn the needles die and fall off leaving bare spots on the season's twigs. Heavy infestations will remove most of the current needles from infested trees, making them unmerchantable for the Christmas tree grower, and useless for making wreaths.

Control*

Control of this insect is often necessary to produce high quality Christmas trees and wreath tips. Infested trees should be sprayed with diazinon** or chlorpyrifos. Spraying should be timed for after egg-hatch. The new foliage must be elongated and the current year's needles flared out to get adequate pesticide coverage (late May-early June in central and southern Maine). Note: It is absolutely essential that the host be in this condition to achieve effective control.

Be sure to refer to the pesticide label for specific use instructions, dosages, timing, and precautions. The pesticide formulations you select must have specific use instructions for the intended site (i.e., "balsam fir"; "ornamentals" followed by "evergreens" or "conifers"; "conifer plantations" etc.).

NOTE: Some formulations of emulsifiable concentrate pesticides, including diazinon (AG500) and chlorpyrifos (Lorsban 4E) have been observed to cause plant injury when applied with mist blower equipment after budbreak on developing foliage. Be cautious; risk of injury is lowered by careful attention to application timing, correct dilution of the spray mixture (use more water per acre) and selection of the proper application equipment. When in doubt, spray small areas in a trial basis before treating the entire field or planting.

For further information about controlling this pest you should contact the Insect and Disease Laboratory, 50 Hospital Street, Augusta, ME 04330-6514, Tel. (207) 287-2431 - Fax (207) 287-2432.



Galled Needles

***NOTE:** These recommendations are not a substitute for pesticide labeling. Read the label before applying any pesticide. Pesticide recommendations are contingent on continued EPA and Maine Board of Pesticides Control registration and are subject to change.

****Restricted-use pesticide; may be purchased and used only by certified applicators.**

Caution

For your own protection and that of the environment, apply the pesticide only in strict accordance with label directions and precautions.