



Arborvitae Leafminers *Argyresthia* sp.

DESCRIPTION: There are four species of arborvitae leafminers in the Northeast, although the arborvitae leafminer, *Argyresthia thuiella*, is the most common in New York State. The major food plant is arborvitae (*Thuja*). The adults are tiny (3/8 inch wingspan) white to light gray moths with brown markings on the forewings. The larvae or caterpillars are 1/8 inch in length with a light green (sometimes with a reddish or yellow tinge) body and a shiny black head (**Figure 1**).

INJURY: Mined leaves have at first a translucent or straw color, later turning brown (**Figure 2 & 3**). Mines start near the end of a branchlet in the scale-like leaves and extend into other branchlets. Injury begins in the summer and reaches a climax in the fall. Death of mined branchlets often occurs giving the tree a sickly appearance. The greatest injury probably occurs to hedge rows and ornamental plantings.

LIFE HISTORY: The adults are active from late May to early June. Many tiny glittering moths may call attention to an infestation. After mating, the females deposit eggs on the inner edges of the arborvitae leaves. The young larvae enter the leaves and mine or excavate between the leaf surfaces (**Figure 4**). The larvae overwinter in the mines and resume feeding for a short while the following spring. Pupation occurs in late May and the adults emerge soon after (**Figure 5**).

MANAGEMENT: Under forest conditions, leafminers are usually kept in check by natural control factors including tiny hymenopterous (wasp) parasites. Parasites are usually not abundant in specimen trees.

Remove and destroy infested leaves from fall until early spring. If needed, treat with acephate, lambda-cyhalothrin, or spinosad. For larvae, apply in mid-May (150–260 GDD) and mid-August (1800–2200 GDD). For the moth stage, treat in mid-June (533–700 GDD). GDD = growing degree days. For information on



Figure 1. Arborvitae leafminer larva (Note the dark head and reddish tinge on the body) (John A. Weidhass, Virginia Polytechnic Institute and State University, www.Bugwood.org)



Figure 2. Typical brown color of arborvitae foliage damaged by a leafminer. (Gyorgy Csoka, Hungary Forest Research Institute, www.Bugwood.org)

utilizing GDD contact Cornell Cooperative Extension – Suffolk County or visit the CCE web site <http://ccesuffolk.org/assets/Horticulture-Leaflets/Using-Growing-Degree-Days-for-Insect-Pest-Management.pdf>

Pesticide and management recommendations obtained from: *Part I Guide to Pest Management Around the Home, Cultural Methods* and *Part II -- Pest Management Around the Home, 2009-2010 Pesticide Guidelines*, Miscellaneous Bulletins 139S74I and 139S74II, Cornell Cooperative Extension Publications. Contact our office for information on ordering copies.

The Pesticide Management Education Program (PMEP), in cooperation with the New York State Department of Environmental Conservation (NYSDEC), maintains a web site with a searchable database for pesticide products currently registered in New York State. Individuals who have Internet access can locate currently registered products containing the active ingredients suggested above at <http://pims.psur.cornell.edu/index.php> (NYS PIMS).

This publication contains pesticide recommendations. Changes in pesticide regulations occur constantly and human errors are still possible. Some materials mentioned may no longer be available, and some uses may no longer be legal. All pesticides distributed, sold or applied in New York State must be registered with the New York State Department of Environmental Conservation (DEC). Questions concerning the legality and/or registration status for pesticide use in New York State should be directed to the appropriate Cornell Cooperative Extension specialist or your regional DEC office. Read the label before applying any pesticide.

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Figure 3. Notice the small hole where the adult moth exited from the damaged foliage. (Gyorgy Csoka, Hungary Forest Research Institute, www.Bugwood.org)



Figure 4. A exposed mine showing frass from the larva. (Therese Arcand Natural Resources Canada <http://imfc.cfl.scf.rncan.gc.ca/accueil-home-eng.html>)



Figure 5. Pupa and adult moth of arborvitae leafminer. (John A. Weidhass, Virginia Polytechnic Institute and State University, www.Bugwood.org)