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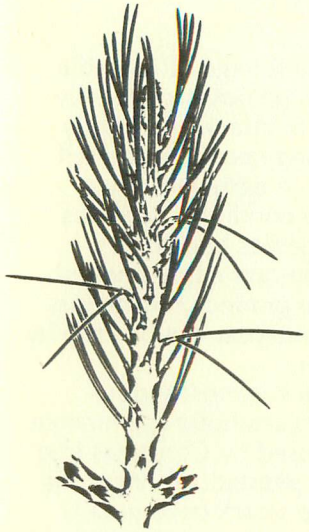
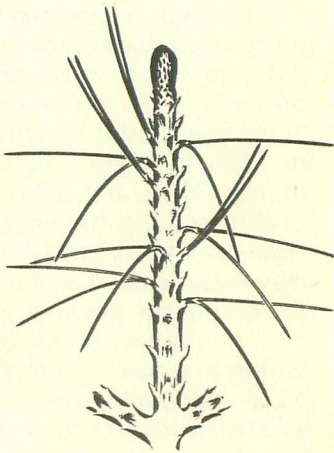
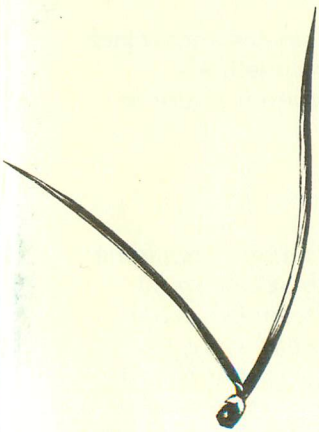
Cat. No.: Fo 42-57/1977

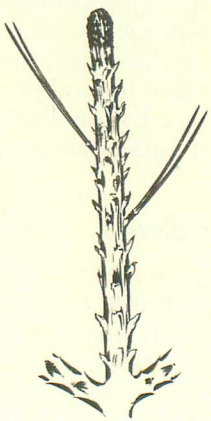
Pine needle midge

Scots pine
Red pine









Canadian Forestry Service

Pine needle midge

Damage

Damage is confined to the foliage of 2-needle pines, most commonly Scots pine but occasionally red pine. The first symptoms of attack are slightly off-color, short and/or drooping needles scattered along new shoots in late June or early July. From mid-July to August, the droop condition becomes more evident, and affected needles become a distinct reddish-brown. Needles are easily severed from the shoots and fall to the ground. Foliage loss may include most of the current-year needle crop by the end of the growing season.

The impact of midge attack is most serious where tree quality is related to aesthetic appearance. Most concern has been expressed by Christmas tree growers and owners of estate plantations. Vigorous trees that have suffered severe attack have usually refoliated normally the following year. Information, however is lacking on the impact of two or more consecutive years of severe attack. Infestations have been found mostly on the top branch whorls of trees, where damage has often been confined only to the foliage on the leader.

If, however, the insect pest remains unchecked, by either natural or applied control methods, damage by this small insect will severely injure or kill branches and trees.

The cause

The adult of the pine needle midge, *Contarinia baeri* (Prell), is a small, brownish-black fly about 2 mm in length. After emergence from its cocoon in the ground litter in mid-June to early July, the females deposit eggs on the foliage of new shoots.

During June, July and August larvae feed at the base of needles, hidden by the sheath covering. By carefully detaching a pair of suspect needles and removing the sheath, the small maggot-like larvae may be seen at the feeding site on the interior (flat) surface of a needle. As the orange-colored larvae measure only 2-3 mm long when fully grown, detection is aided by the use of a magnifying glass. Two or more larvae may feed on the same needles initially, but usually only one can be found between each needle pair at the completion of the feeding period. After feeding, the larvae fall to the ground litter, often with the prematurely detached foliage, where they overwinter in cocoons.

Control

In Christmas tree growing areas where defoliation is light to moderate, or where the distribution of the insect is restricted to a few small pockets, the appearance of damaged trees can be restored by corrective clipping and shearing.

At present there are no insecticides registered for use in Canada for control of the pine needle midge. However, experimental treatments with common insecticides such as dimethoate, fenthion and malathion have indicated a possibility of good foliage protection through properly timed spray treatments. Additional evaluations of chemical treatments by the Canadian Forestry Service are in progress and further details will be released later.

The main natural control of the pine needle midge on Scots pine is a small parasite, *Tetrastichus* sp. Parasitism by this small wasp has been known to exceed 90% in very high midge populations.