Large Aspen Tortrix

United States Department of Agriculture

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Figure 5. Parasitized tortrix larva.

Figure 6. Tortrix pupal cases.

Take-No-Action Approach: An aspen tree that 's healthy and growing well can withstand a few years of tortrix feeding. The tree's diameter and height will not be adversely affected; serious damage or death is uncommon. To assure good tree vigor, the following steps should be taken:

- Avoid damaging the tree's trunk, injuring its roots, altering soil drainage patterns, or severely compacting the soil.
- Spring fertilization helps promote tree vigor. The USDA Cooperative Extension Service recommends one to two pounds of fertilizer

markings on their forewings (Cover photograph). They generally deposit green egg masses on the upper surfaces of leaves.

Eggs hatch by the end of July, and the young caterpillars are active until mid-August. Within each rolled leaf, tortrix feed on the lower and upper surfaces. Only a skeleton of the leaf is left. A new generation of caterpillars migrates to protected areas, spins shelters, and overwinters to begin the cycle once again (Figures 4–6).

Figure 4. Tortrix egg masses. Note leaf skeletonization as a result of feeding by young larvae.

GUIDELINES FOR REDUCING DAMAGE: Under natural conditions tortrix populations seem to cause little permanent damage. Artificially suppressing large numbers of tortrix on forested land is generally not warranted. They can, however, be more destructive in urban areas where human disturbances weaken aspen trees. Control alternatives in urban and suburban settings include a chemical treatment and a take-no-action approach.

LARGE ASPEN TORTRIX

The large aspen tortrix, a leaf-eating caterpillar, periodically affects large areas of quaking aspen in southcentral and interior Alaska. This insect is typical of northern tree defoliators; populations increase to epidemic proportions for 2 to 3 years then significantly decrease.

The first recorded tortrix epidemic in Alaska was in 1966 when over 5,000 acres were affected. In 1978, tortrix damage was found near Willow, Alaska and the following year infestations covered more than 26,000 acres. Total defoliation occurred on many sites (Figures 1, 2).

The most common effects of heavy tortrix feeding are a temporary reduction in tree growth and occasional branch and top dieback. Healthy hardwood trees can generally recover from several years of moderate to heavy tortrix feeding. In a short amount of time they can produce new leaves.

When trees are not healthy and vigorous when attacked, the chance of death increases after

Figure 1. Defoliated aspen trees near Willow, Alaska.

into unopened buds. Leaves can be completely destroyed before the buds begin to open.

Older larvae, gray-green to black caterpillars with dark heads, feed more openly. In heavily defoliated aspen stands the understory plants, including spruce and birch, are eaten and often extensively "webbed" (Figure 3).

Mature caterpillars transform into black pupae, a nonfeeding stage between caterpillars and adult moths. The pupae are generally found within rolled aspen leaves. They can also be found on the webbed understory plants.

Adults emerge from the rolled leaves and are active from late June until early July. Tortrix moths are mostly gray with some brown

Figure 3. Tortrix webbing on white spruce understory.

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two or more years of heavy infestation. This often occurs in areas of new building or road construction where trees are mechanically damaged and soil is compacted or excessive amounts of soil are placed on the root system.

Figure 2. Extreme aspen defoliation. Note the conspicuous webbing.

LIFE HISTORY: In Alaska the large aspen tortrix, *Choristoneura conflictana* (Wlkr.), has a one-year life cycle. Tortrix overwinter as small larvae (caterpillars) in bark crevices at the base of trees and along twigs. During the first 2 weeks of May, larvae become active and work their way

per inch of tree diameter. Any complete lawn or garden fertilizer high in phosphorus is adequate. Apply by making a series of holes, 8–10 inches deep, around the tree starting two feet from the trunk and extending a few feet beyond the dripline (Figure 7). Fertilizing should begin in the spring and continue throughout the summer, then be discontinued prior to fall dormancy. A feeding program may not be necessary every year. Fertilizer uptake, soil type, rainfall, weather, and grass cover will all determine the time of reapplication.

Chemical Treatment: Chemical treatment may be warranted if aspen trees show signs of extensive tortrix feeding for 2 consecutive years and if top or branch dieback is apparent. If used, insecticides can be applied from mid-May until early in June when aspen buds are open and new leaves are expanding. Young tortrix larvae are susceptible to chemical treatment at that time.

Presently, no specific insecticides are registered for use against large aspen tortrix. Several insecticides for suppressing leaf rollers, which are related to tortrix and have similar feeding habits, can be used. They are registered with the U.S. Environmental Protection Agency.

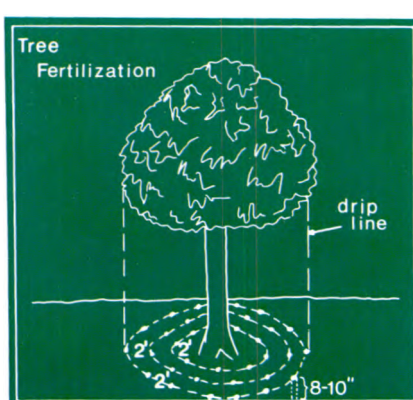

Figure 7. Location and depth of fertilization.

Large Aspen Tortrix, by Edward Holsten, Entomologist, Forest Pest Management, State and Private Forestry, USDA Forest Service, Alaska Region.

Additional information on this insect and control alternatives can be obtained from your local USDA Cooperative Extension Service office, Alaska State Forestry office, or from:

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