



Cankerworms

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INTRODUCTION

Cankerworm caterpillars are "inchworms" or loopers common on shade trees in late spring. Two species of cankerworms are landscape pests:



Fall Cankerworm (Alsophila pometaria) - Found in eastern North America as far west as Montana. Fall cankerworm caterpillars have three pairs of prolegs. The eggs are laid in late fall and winter.

Spring Cankerworm (Paleacrita vernata) - Found over most of North America, including Texas and California. The caterpillars of this species have two pairs of prolegs. The eggs are laid in early spring.

HOST PLANTS

Cankerworms feed on the leaves of many different hardwood trees, including **oaks, elms, apples, cherries, hickories, maples, ashes, beeches and lindens**. In addition, large caterpillars often spin down on silk threads from large trees and feed on dogwood flowers, rose buds and other landscape ornamentals.

DAMAGE

Cankerworm defoliation increases tree stresses already present in residential areas, leading to borer damage, branch dieback and root decline. A U.S. Forest Service study in Virginia found that after two years of cankerworm defoliation, 17% of black oaks had died and another 27% were declining.

LIFE CYCLE

As shown in Figure 1, cankerworms have only one generation each year. The eggs of both species hatch in early spring, about the time that saucer magnolia blossom and eastern redbud is beginning to bloom. Growth Degree Days (GDD; threshold = 50°F) for cankerworm egg hatch is about 120 GDD.

MANAGEMENT TECHNIQUES

Monitoring Landscape plant problems are most effectively managed with regular inspections (monitoring), with treatments based on the results of the inspections. This concept is known as Integrated Pest Management (IPM). When monitoring for cankerworms, the following thresholds may be used as guidelines:

A. Sticky tree band captures (average catch per tree) of female moths: 1 to 45 - Light defoliation, 46 to 90 - Moderate defoliation, and 91+ - Heavy defoliation

B. Caterpillars per 15" branch tip: 1 to 4 - Light defoliation, 5 to 8 - Moderate defoliation, and 9+ - Heavy defoliation

The accuracy of the above guidelines will be influenced by many variables, such as weather, host trees, parasitism and predation.

Nature Research conducted at the Bartlett Tree Research Laboratories in Charlotte, North Carolina has indicated that sprays containing the naturally occurring bacterium *Spinosad* (Conserve) are an effective control for cankerworm caterpillars. Conserve usually does an excellent job of preventing tree defoliation, but may not eliminate the nuisance problems cankerworms present for homeowners. The timing of B.t. treatments is critical - applications shortly after all the eggs hatched are most effective. B.t. is the control of choice near water, wildlife habitat or other environmentally sensitive areas.

Chemical - Chemical foliage spray treatments are the most widely effective and least expensive approach to cankerworm management. Modern pyrethroid insecticides offer an excellent combination of safety and effectiveness. Pyrethroids are fast acting and will quickly eliminate nuisance problems. The timing of pyrethroid applications is less critical than other products since pyrethroids have a long residual on foliage. Pyrethroids are also capable of killing the large caterpillars that do most of the damage.

Tree Banding Female cankerworm moths do not have wings and must walk up the trunks of trees to lay their eggs. Sticky bands placed around tree trunks will capture these moths and prevent oviposition. Figure 2 shows a typical band. Never put the sticky insect trapping material directly on the tree, as this is damaging to the bark and will leave a dark stain for many years. For the fall cankerworm the bands should be in

place within a week after the first hard freeze in late fall. For the spring cankerworm the bands should be in place by late winter.

TREE CARE

One year of cankerworm defoliation is not permanently damaging to healthy shade trees. However two or more years of defoliation will reduce growth, cause branch dieback, and lead to a general weakening of trees, allowing secondary insects and diseases to kill trees. The following steps are recommended to protect valuable shade trees during cankerworm outbreaks:

- Prevent two consecutive years of defoliation - spraying and banding are usually necessary.
- Mulch and water - place an organic material, such as wood chips, 2-4" deep under trees as described in the Technical Report Guidelines for Mulch Application. Deeply water during dry spells.
- Fertilize, Slow release tree fertilizer will help trees recover from cankerworm outbreaks. Routinely fertilized trees will be better able to withstand future stresses and insect outbreaks.

Figure 1. Life cycle of the fall cankerworm.