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Pests of Trees and Shrubs: Leaf Chewing Insects

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Pests of Trees and Shrubs

Leaf Chewing Insects

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Cooperative Extension Service
South Dakota State University
U. S. Department of Agriculture





Leaf Chewing Insects

B. H. Kantack, Extension entomologist
W. L. Berndt, Extension pesticides
specialist

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A tree or shrub in full foliage is an object of beauty and economic value. Yet leaf beetles can completely strip it by midsummer, or other leaf-chewing insects can build unsightly "webs" or "tents" on it.

This fact sheet describes the more common leaf chewers and gives control recommendations so that you can save your valuable trees and shrubs. Two companion fact sheets cover other common insects attacking trees and shrubs: FS 647 treats insects that suck plant juices and the gall formers; FS 649 discusses insects that attack stems, branches, and trunks.

If the particular insect bothering your plants still eludes identification, talk to your county Extension agent or contact the authors at SDSU for assistance.

Leaf-chewing Insects

Flea Beetles

Appearance. Flea beetles are very small, with a metallic color of blue, green, or black. Their hind legs are fitted for jumping, and they jump much like fleas when disturbed.

Type of damage. These beetles are of minor importance, although they eat small "pin-holes" in the leaves of trees and shrubs.

Plants attacked. Many of the deciduous trees and shrubs may be visited by flea beetles.

Leaf Beetles

Appearance. The Elm Leaf Beetle is a very common pest of elms in South Dakota. The adult beetle is about 1/4 inch long, yellowish to olive-green with a black, sometimes indistinct, stripe along the margin of the wing covers. Eyes are black and the antennae and legs yellowish.

Larvae when full grown are 1/2 inch long and dull yellow with two black stripes down the back. Both adults and larvae may severely skeletonize a tree.

The Cottonwood Leaf Beetle is easily recognized by the eight black spots on its yellow wing covers. The adult is 1/4 to 1/3 inch in length. Larvae on

first hatching are dark black in color, becoming progressively lighter as they grow and molt. These leaf beetles attack cottonwood, poplar, and willow. They often are regarded as South Dakota's number one enemy of poplars and willows.

The Spotted Willow Leaf Beetle is somewhat similar to the Cottonwood Leaf Beetle, and frequently the two may be found feeding together. This beetle is deep black beneath, and the background color of some individuals is red instead of yellow. The wing covers are marked with rows of square or transverse black spots. Its size is 3/16 to 1/3 inch long. Larvae are similar in appearance to that of the Cottonwood Leaf Beetle.

Type of damage. The leaf beetles are notorious for the amount of leaf feeding and "skeletonizing" of foliage they do. Producing several

generations a year, they can cause widespread damage from early spring until fall.

Plants attacked. Elm Leaf Beetle: elm. Spotted Willow Leaf Beetle and Cottonwood Leaf Beetle: willow, poplar, and cottonwood.

Cutworms

Appearance. A number of cutworm species may feed on shrubs and trees. Many of them feed at night and hide by day. Cutworms are usually a dingy to shiny grayish-black.

Type of damage. Leaves of plants attacked by cutworms appear ragged. When cutworms are numerous, serious defoliation can take place. On seedling trees, climbing cutworms may eat the bark of the small twigs and stems as well as the leaves.

Plants attacked. Nearly all plants are subject to attack by cutworms.



Fig. 1. Adult and larvae, cottonwood leaf beetle.

Cankerworms

Appearance. There are two species of cankerworms in South Dakota. One attacks shrubs and trees in the spring and is known as the Spring Cankerworm. The other attacks in the fall and is known as the Fall Cankerworm. The larvae are similar in appearance and habits, and are often called "measuring worms" because they loop their bodies when moving about. Larvae are about 1 inch long and brown to brownish-green.

Type of damage. Larvae damage trees by eating the leaves, sometimes completely stripping the tree.

Plants attacked. Primarily elm, although other shade trees, as well as fruit trees, are attacked.

Fall Webworm

Appearance. These worms leave conspicuous gray webs that enclose the tips of branches. Webworms (about 1 inch long, pale yellow with black spots) feed entirely within the web.

Type of damage. Webworms are not usually considered a serious pest. The portion of the branch within the web usually becomes defoliated. The webbing becomes unsightly on trees that are affected.

Plants attacked. Cottonwood, poplar, aspen, willow, oak, and several shrubs.

Tent Caterpillars

Appearance. Two species of tent caterpillars are of importance in South Dakota. The Eastern Tent Caterpillar constructs a silken tent in the crotch of a tree. The caterpillars are dark gray or black with a white line along the side. They congregate in the "tent" during adverse weather or while resting, although they may feed beyond the confines of the tent.

The Forest Tent Caterpillar does not make a silken tent, but the larvae live and feed together. A larva has a row of diamond or oval-shaped white spots down the midline of the back.

Type of damage. Tent caterpillars are serious defoliators of shade trees. The larvae are very active and do a large amount of feeding.

Plants attacked. Many deciduous shade trees, and some fruit trees.

Walnut Caterpillar

Appearance. Full grown larvae are approximately 2 inches long, black, and covered with long, gray hairs. Younger larvae are brick-red to dark red brown in color, with pale yellowish-gray lengthwise stripes.

Type of damage. Larvae are very serious defoliators of host trees, and when abundant, completely strip the trees.

Plants attacked. Walnut and hickory trees.

Yellow-necked Caterpillar

Appearance. The caterpillars reach a length of 2 inches when fully grown and have a very noticeable yellow spot just behind the head. The body of the caterpillar has yellow stripes running lengthwise. The larvae have a tendency to congregate in crotches and on larger branches of the tree.

Type of damage. Often this caterpillar becomes locally abundant in groves and shelterbelts. Serious injury can result when the larvae devour the foliage.

Plants attacked. Birch, basswood, cherry, elm, apple, hawthorn, oak, and other deciduous trees.

Tussock Moth

Appearance. Tussock moth larvae are easily recognized by their prominent color and markings. Four tufts of short, white, erect hairs are very noticeable on the back. Two bright red spots are present on the back toward the rear end. Two long tufts of black hair project from the head, one on each side.

Type of damage. Damage is caused by larvae defoliating the tree.

Plants attacked. Almost all fruit and shade trees.

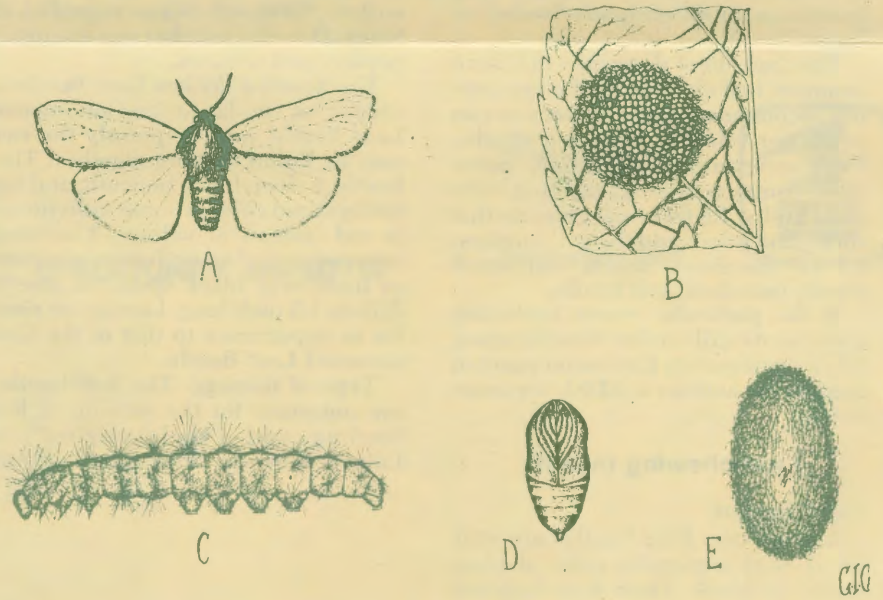


Fig. 2. Fall webworm: (a) adult moth, (b) egg mass on leaf, (c) larva, (d) pupa, (e) cocoon.

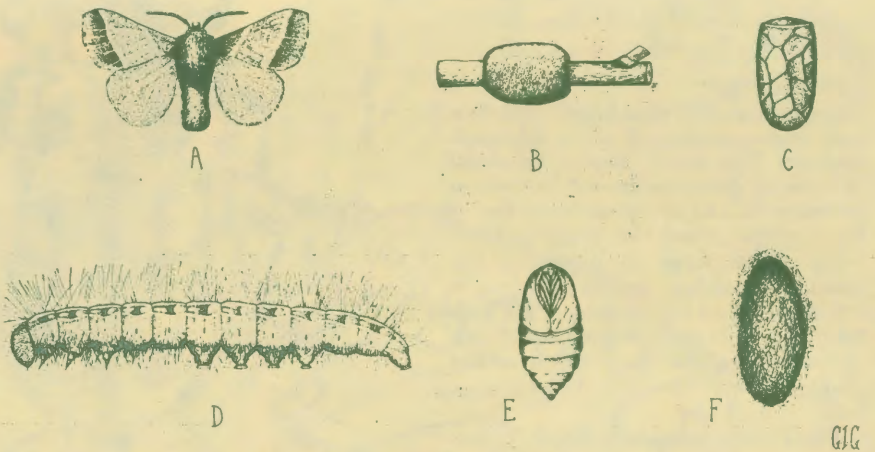


Fig. 3. Eastern tent caterpillar: (a) adult moth, (b) egg mass in twig, (c) individual egg, (d) larva, (e) pupa, (f) cocoon.

Spiny Elm Caterpillar

Appearance. The full-grown caterpillar is approximately 2 inches long and is black, with a row of red dots down the middle of the back. The most prominent features of the larvae are the heavy, branched, black spines.

Type of damage. On occasion, populations become abundant enough to cause serious injury to trees, especially in a shelterbelt.

Plants attacked. Elm, willow, poplar, and hackberry.

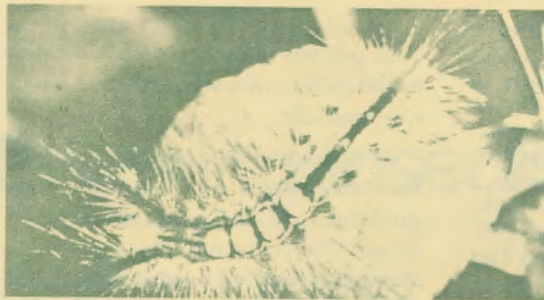


Fig. 4. Tussock moth larva (left) and spiny elm caterpillar (right).

Hornworms

Appearance. The various hornworms that feed upon trees and shrubs are among the largest caterpillars. Hornworms are usually greenish, often marked with white, and all specimens either have a horn or eye-like structure on the back near the posterior end. Adults are the large moths known as hawk moths.

Type of damage. Larvae consume a great deal of vegetation because of their size. When they become abundant, serious defoliation occurs on host plants.

Plants attacked. Ash, cottonwood, willow, and a number of shrubs.

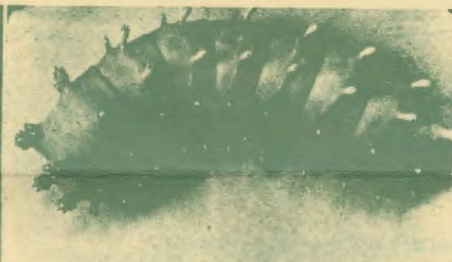


Fig. 5. Cecropia moth (left) and larva (right).

Cecropia Moth

Appearance. A larva of this moth attains a length of from 3 to 4 inches when fully grown. It is dull bluish-green, and has six rows of tubercles (knot-like growths) on its body. The tubercles are red, yellow, and blue. The moth is a handsome specimen, with wing spread up to 6 inches. Each wing bears near its center a crescent-shaped white spot bordered with red.

Type of damage. This moth rarely occurs in sufficient numbers to cause much damage. Each larva consumes a large amount of food in its lifetime.

Plants attacked. Most all trees and shrubs.

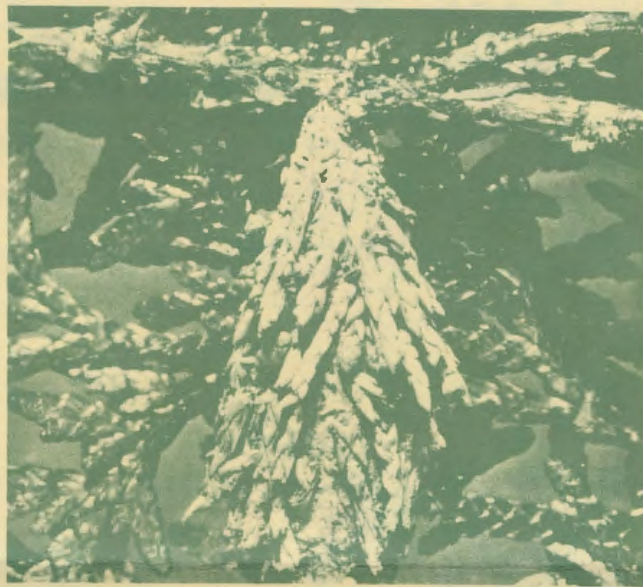


Fig. 6. Bagworm.

Sawflies

Appearance. Two species of sawflies are commonly troublesome to shade trees. The Elm Sawfly larvae are 2 inches long and pale yellowish-white with a black stripe down the middle of the back and a row of black dots on each side of the body. The Ash Sawfly larvae are about 3/4 inch long and a dingy white with a shiny black head and dark legs. There are a few spotted or striped sawfly larvae that feed on pines.

Type of damage. Larvae feed on leaves and needles, causing defoliation of the affected tree. The Elm Sawfly adult causes some damage by girdling twigs.

Plants attacked. Ash, elm, pines.

Leaf Miners

Appearance. There are many leaf miners attacking various conifers, deciduous trees, and shrubs.

Type of damage. Larvae in this group feed under the epidermis and eat various zig-zag tunnel patterns on the leaves and needles. Heavy feeding will cause the leaves or needles to dry up and fall off.

Plants attacked. Nearly all conifers, deciduous trees, and shrubs.

Bagworms

Appearance. Bagworms form the conspicuous, spindle-shaped cocoons or cases comprised of bits of dead leaves or needles. Young larvae or

worms spin a silken bag around themselves and carry this bag with them. As a larva grows the bag becomes larger, until time of pupation, when the full-sized cocoon is made.

Plants attacked. Almost all conifers and deciduous trees.

Control of Leaf-chewing Insects

An "all purpose" spray (2 pounds of 50% methoxychlor and 4 pounds of 25% malathion wettable powder in 100 gallons of water) will give satisfactory control of chewing insects. For smaller quantities of spray, mix 2 level tablespoons of 50% methoxychlor and 4 tablespoons of the 25% malathion to each gallon of water. The wettable powder is less likely to injure foliage than emulsion sprays.

In addition, Carbaryl (Sevin), at 1.25 pounds of 80% wettable powder to 100 gallons of water, will give effective control.

A biological insecticide, *Bacillus thuringiensis*, is now available. Formulations are sold under the name of Dipel, Thuricide, etc. These products should be applied according to label directions.

Attention

All insecticides are poisonous and should be handled accordingly. Do not smoke or eat while spraying. Follow any precautions that are listed on the labels. Wash exposed areas of the skin with soap and water following application of the insecticide. Spray materials should be stored out of the way of children and plainly marked.

The use of tradenames does not imply endorsement of one product over another.

In case of accidental poisoning, contact: Poison Control Center, McKennan Hospital, Sioux Falls, S.D., Telephone 605-336-3894.

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