

The Larch Sawfly

by Ed Holsten, Research Entomologist, USDA Forest Service, Alaska Region, State and Private Forestry.

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

Forest Health Protection
State and Private Forestry
USDA Forest Service
2770 Sherwood Lane, Suite 2A
Juneau, Alaska 99801-8545
Phone: (907) 586-8883

Forest Health Protection
State and Private Forestry
USDA Forest Service
3301 "C" Street, Suite 522
Anchorage, Alaska 99503
Phone: (907) 743-9455

or:

www.fs.fed.us/r10/spf/fhp/fhpr10.htm

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, sexual orientation, or marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 1400 Independence Avenue, SW, Washington, DC 20250-9410, or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

The Larch Sawfly



The larch sawfly (*Pristiphora erichsonii*) (Hymenoptera: Tenthredinidae) was first recorded in North America in 1880. It is believed to be of European origin. It now occurs in all Canadian Provinces and all of the northern tier states plus Maryland, North Carolina, and West Virginia. It was first recorded from Alaska in 1965. Outbreaks of the larch sawfly became apparent in Alaska in 1993 when 12,000 acres of tamarack (eastern larch) defoliation was observed in interior Alaska. By 1996, this outbreak encompassed more than 600,000 acres and still continues, although at a slower pace. Tamarack mortality (Cover photo) has been observed over extensive areas of the interior as a result of more than seven consecutive years of feeding. In 1999, the larch sawfly was recorded from the Mat-Su valley and the Anchorage Bowl feeding on ornamental Siberian larch. This is the first time that this defoliator has been recorded south of the Alaska Range and no doubt represents an accidental introduction. By 2001, larch sawflies were observed feeding on Siberian larch on the Kenai Peninsula. The purpose of this brochure is to describe the life history and life stages of the larch sawfly and to present the homeowner with some guidelines for minimizing damage to ornamental and native larch.

Life History

In Alaska, winter is spent in the prepupal stage (brownish cocoons) in the litter layer on the forest floor. Pupation occurs in the spring and the adults emerge from May through July depending upon temperature and location. Less than

two percent of the emerging adults are males, and reproduction is usually accomplished without mating. Eggs are deposited in rows under the bark of currently elongating shoots on the branches usually causing a characteristic curling of the new shoots. Eggs hatch in about a week. The young larvae move to and feed in groups upon tufts of needles. Feeding is completed in about three weeks; mature larvae drop to the ground, enter the litter layer, and spin papery, brown cocoons. Because of the long period of adult emergence, all life stages may be found at the same time in the summer. There is probably one generation per year in Alaska.

Description

Translucent eggs are approximately 1/16 inch long. Newly hatched larvae have brown heads and cream-colored bodies. Mature larvae have shiny black heads with bodies that are gray green along the back and whitish beneath and are about 1/2 inch long (Figure 1). The papery brownish cocoons are capsule shaped and measure about 7/16 by 3/16 inch. Adult females are



Figure 1. Mature sawfly larva.



about 3/8 inch long with black antennae and bodies. The abdomen has a broad orange band and tapers sharply towards the rear (Figure 2). Males have yellowish antennae, an orange abdominal band, but the abdomen is cylindrical and rounded at the rear.

Damage Caused

Heavily defoliated trees commonly re-foliate after a few weeks. Repeated defoliation, however, can result in trees with thinned foliage, branch mortality, and a significant growth loss. Larch growing on poor sites that have been defoliated for consecutive years may die.

Guidelines for Reducing Damage

For natural growing tamarack, there are few control options. Native tamarack and ornamental Siberian larch growing in plantations and other artificial settings such as urban areas are very susceptible to larch sawfly damage. It is important to insure that trees in those situations have the best possible growing conditions. Care should be taken to avoid injuring the roots, either mechanically or through soil compaction. Soil should neither be placed on top of nor removed from the area beneath the crown of the tree. In order to avoid moisture stress, adequate water should be provided to the trees throughout the growing season. Spring fertilization also helps to promote tree vigor and to minimize the effect that defoliators such as sawflies might have on a tree. The USDA Cooperative



Figure 2. *Female sawfly.*

Extension Service should be consulted for specific information on the type and amount of fertilizer to be applied.

Normally, harsh winter weather with below normal snowfall and parasitism of the overwintering stage are the most important natural control for larch sawflies. Insectivorous birds also consume sawfly larvae during the summer.

Alternatives: When sawflies are sighted, several alternatives are available for their control:

When sawfly populations are low, some defoliation may occur but most trees will re-foliate later in the growing season. The raking and disposal of needles and litter beneath the infested tree in the fall will remove the overwintering stage and minimize sawfly defoliation the following year.

A high-pressure water spray will dislodge many larvae from the needles, but will need to be repeated fairly frequently during the season. Handpicking of the larvae from small trees is also effective.

Many commercial insecticides are available and effective against sawflies and can be used for short-term control, but may require additional applications during the season. Check with your local Cooperative Extension Service office for insecticides that are currently registered for control of larch sawflies.

Systemic insecticides are longer lasting, but take longer to become effective and require extreme caution in their application. These systemics can be applied either to the foliage or to the soil to be absorbed through the roots and transported later to the foliage. Again, check with your local Cooperative Extension Service office for insecticides that are currently registered.

Contact the Alaska Cooperative Extension Service for recommended insecticides.

CAUTION: Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or other wildlife—if they are not handled or applied properly. Use all pesticides selectively and carefully. Since approved uses of a pesticide may change frequently, it is important to check the label for current approved and legal use. Follow recommended practices for the disposal of surplus pesticides and pesticide containers. Mention of a pesticide in this publication does not constitute a recommendation for use by the USDA, nor does it imply registration of a product under Federal Insecticide, Fungicide, and Rodenticide Act, as amended. Mention of a proprietary product does not constitute an endorsement by the USDA.

Photography Credits:

Figure 1: Forest Pests of North America, IPM Photo CD Series, The University of Georgia Cooperative Extension Service, Tifton, GA.

Cover photo: Field Guide to Forest Damage in British Columbia, March 1999. Joint Publication No. 17, BC Ministry of Forests and Canadian Forest Service.

Figure 2: Insects that feed on Trees and Shrubs. 1988. Johnson, W.T. and H.H. Lyon. Cornell University Press, Ithaca, NY.