

Forest Pest Fact Sheet

February 2016



FOREST TENT CATERPILLAR, (*Malacosoma disstria*.)

BACKGROUND

The forest tent caterpillar is a common insect defoliator native to North America. Severe outbreaks result in extensive defoliation of deciduous species throughout its range. The feeding stage is the larva or caterpillar.

DISTRIBUTION

The range of the forest tent caterpillar extends throughout much of the United States and Canada, generally wherever host species occur. Widespread frequent outbreaks are common in the Prairie Provinces.

DESCRIPTION OF LIFE STAGES

Adult moths are light brown in colour with two darker oblique bands running across the forewings. They have a wingspan of 30 mm to 45 mm. Grey coloured eggs are laid in bands that are 5 mm to 15 mm long. There are usually 150 to 200 eggs in a single band. The bands encircle the twig and are covered with a shiny protective substance called spumaline. The young larvae are black with dark hair, whereas mature larvae are dark brown with a broad band of blue along each side. Down the center of the back, there is a row of cream-white coloured keyhole-shaped spots. There are four fine orange lines extending the length of the body. Light yellow silken cocoons are spun between leaves of host trees or in other sheltered locations. The pupae, which are inside the cocoons, are a brownish to black colour and about 20 mm in length.

Forest tent caterpillar adult moth



Image: Natural Resources Canada,
Canadian Forest Service, Northern Forestry

Forest tent caterpillar egg band



Image: Saskatchewan Ministry of Environment,

Centre

Forest tent caterpillar mature larvae



Image: Saskatchewan Ministry of Environment

Forest tent caterpillar cocoon



Image: Saskatchewan Ministry of Environment,

HOST SPECIES

The preferred host of the forest tent caterpillar is trembling aspen. However, oak, ash, maple, birch, and many other deciduous trees and shrubs are also suitable hosts. When populations are extremely high, they may also feed on coniferous species.

LIFE CYCLE

The forest tent caterpillar has one generation per year. Adult females lay their eggs from July to early August. First instar larvae develop inside the eggs within three weeks. These larvae overwinter in the eggs and hatch in spring. Hatching from the eggs coincides with bud development on host trees. The young larvae feed in colonies on the developing leaves. Unlike other species of tent caterpillars, they do not construct distinct tents. Rather, they spin silken threads along which they travel. Larvae often cluster together while resting or during molting. The greatest amount of feeding occurs in the fifth instar when a single larva may consume up to seven leaves. In this stage, the larvae migrate in search of new food supplies or suitable cocooning sites. There are five larval instars. After five to eight weeks of feeding, the larvae spin silken cocoons from mid-June to mid-July. The pupal stage is normally ten days. Adults emerge in mid to late July, mate and lay their eggs. Adults live for five to ten days. They are active fliers and can be carried for several hundred kilometers on air currents.

SIGNS, SYMPTOMS AND DAMAGE

Widespread forest tent caterpillar outbreaks tend to occur at intervals of six to 16 years. Depending on larval numbers, feeding can result in light thinning of foliage to complete defoliation. Substantial growth loss results from severe defoliation. Trees that are completely defoliated will produce a second set of leaves. When populations are high and trees are completely defoliated, larvae migrate on mass searching for food and pupation sites. This migration is considered a major nuisance in residential and recreation areas. Following two or more years of severe defoliation there is a general decline in tree vigour leading to twig and branch dieback. After three or four consecutive years of complete defoliation, trees become weakened, rendering them more susceptible to secondary insects and diseases. However, widespread tree mortality does not normally occur since outbreaks seldom last more than three years.

*Friendly fly *Sarcophaga aldrichii**



Image: www.bugwood.org

Forest tent caterpillar populations are controlled by a variety of natural biotic and abiotic factors including environmental conditions, food quality and quantity, and the effect of parasites, predators and pathogens. An exhausted food supply due to high population levels and late spring frosts, which destroy foliage, can cause mass starvation. Pathogens including Bacterial and viral infection can also bring about a rapid collapse in outbreak populations. Flesh flies, in particular the “friendly fly” *Sarcophaga aldrichii* is a common parasite of the forest tent caterpillar and is instrumental in contributing to population collapse. Adult flesh flies lay live maggots on forest tent caterpillar cocoons. The maggots burrow through the silken case to feed on the pupae.

Forest tent caterpillar severe defoliation



Image: Saskatchewan Ministry of Environment

MANAGEMENT PRESCRIPTIONS

Control of forest tent caterpillar outbreaks in commercial forests is not considered necessary since widespread tree mortality does not occur. However, control programs have been implemented in high use recreation areas for aesthetic reasons and to reduce the nuisance of migrating larvae. The chemical insecticides, carbaryl, dylox, malathion 50 EC, and orthene are registered for tent caterpillar control. The biological insecticide, *Bacillus thuringiensis kurstaki*, the insect growth hormone analog tebufenozide, and some pyrethroid insecticides are also registered. Insecticide spraying should be carried out in late May or early June when leaves are flushing and the larvae are in the second or third instar. In all cases, safety precautions must be taken and label instructions must be followed.

REFERENCES FOR ADDITIONAL INFORMATION

Forest tent caterpillar
Harold O. Batzer and Robert C. Morris

Forest Insect & Disease Leaflet 9
United States Department of Agriculture Forest Service
<http://www.na.fs.fed.us/spfo/pubs/fidls/ftc/tentcat.htm>

Forest tent caterpillar
Natural Resources Canada
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<http://cfs.nrcan.gc.ca/news/262>

Forest Tent Caterpillar in the Upper Midwest
Steven Katovich and Jim Hanson
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NA-PR-02-01 Information Sheet
<http://www.na.fs.fed.us/spfo/pubs/infosheets/tentcat/index.htm>