

The Douglas-Fir Tussock Moth

NPV Virus Information Sheet



Douglas-fir tussock moth mature larva (caterpillar)



Male Douglas-fir tussock moth

What is the Douglas-fir tussock moth?

The Douglas fir tussock moth is a **native insect** in the low-lying, dry belt Douglas-fir regions of southern British Columbia. **It is not an introduced species.** It feeds primarily on Douglas fir, and occasionally on ponderosa pine and western larch. Ornamental trees may be affected in urban areas. During epidemics, tussock moth caterpillars devastate trees, ranging from loss of new needles on branch tips all the way to complete defoliation and tree mortality. Outbreaks generally last between 2-4 years.

Tussock moth caterpillars are covered in thousands of tiny hairs. These hairs may cause an allergic reaction called **tussockosis**.

Will the Douglas-fir tussock moth kill my trees?

Yes. When infestations are severe, trees can be killed in one or two years. Most tree mortality will occur in the first two years of an outbreak cycle.

Your trees may be covered in thousands of voraciously feeding small caterpillars, **beginning in May and continuing through early July.** These caterpillars start feeding on new needles and move onto older needles eventually stripping and killing the tree. Caterpillars are very tiny initially and grow to be upwards of 2.5 cm in length. They are very recognizable by the prominent tufts at either end of the body.

What is NPV virus?

NPV (nuclear polyhedrosis virus) is a **naturally occurring virus** specific to Douglas-fir tussock moth. **NPV** is extremely contagious within a tussock moth population, spreading rapidly, and eventually stopping the outbreak. It is now formulated and registered for controlling the Douglas-fir tussock moth. Within virus-treated areas, caterpillars **continue to feed for about 5 weeks** after treatment before insects cease feeding and die. If the insects are not sprayed when they are very little, there will be extensive defoliation and possible tree mortality. NPV should be **sprayed as soon as the larvae hatch** and is best applied when insect populations are low or early in the outbreak cycle (Year 1 or Year 2). See fact sheet on page 2 for additional details.

Can I apply NPV virus to my infested trees?

No. NPV is registered for use by the federal and provincial governments only. The B.C. Government has [a website](#) outlining current areas of known infestation.

For more information on Douglas-fir tussock moth and its control, please contact:

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VIRUS FACT SHEET

- Full Name: nuclear polyhedrosis virus (NPV)
- Registered Names: VIRTUSS (Canadian formulation)
 - TM Biocontrol-1 (USA formulation)
- NPV is specific to the two native tussock moths found in B.C., the Douglas-fir tussock moth and the rusty tussock moth
- NPV has no harmful effects on other insects, fish, birds, humans or other mammals
- NPV is the major natural agent that contributes to the collapse of tussock moth epidemics
- NPV is spread insect-to-insect in a population and this occurs most widely in the larval (caterpillar) stage
- NPV was first identified in 1947
- NPV was successfully used in 1991-1993 outbreak near Kamloops
- NPV is obtained from dead, infected tussock moths; is freeze dried then kept in cold storage. When used, it is mixed with water and molasses, and sprayed on affected trees.
- NPV is usually present in forest soils and may remain viable for 10 or more years