

European spruce bark beetle

Description

Adults of the European spruce bark beetle (*Ips typographus*) are small (4.0–5.5 mm) cylindrical beetles, dark brown to black in colour. The eggs, larvae and pupae are very similar in appearance to other species of *Ips*.

Male beetles bore into the inner bark and construct a nuptial chamber and emit pheromones that attract from one to four females. Each female then bores an egg gallery out from the nuptial chamber and lays approximately 50 eggs. After the eggs hatch, the larvae feed in galleries which radiate at right angles to the egg gallery. The newly emerged adults feed for a short time under the bark before emerging through small (2–3 mm) round exit holes. The young adults may swarm en-mass to locate new hosts. Alternatively, under cold conditions, they will overwinter in litter or under the bark.

Primary hosts

The European spruce bark beetle is one of the most damaging insect pests of Spruce (*Picea*) in Europe and Asia. It normally infests diseased, damaged or recently fallen trees, including windthrow, harvest slash or logs. With high population levels in an outbreak, it can colonise and kill apparently healthy trees, including species of Pine (*Pinus*), Fir (*Abies*) and Larch (*Larix*).

In Europe, outbreaks can be caused by disturbances such as fire or in areas presenting large volumes of harvesting residue. Stands that have been stressed by extreme weather conditions, including periods of drought, are also susceptible.

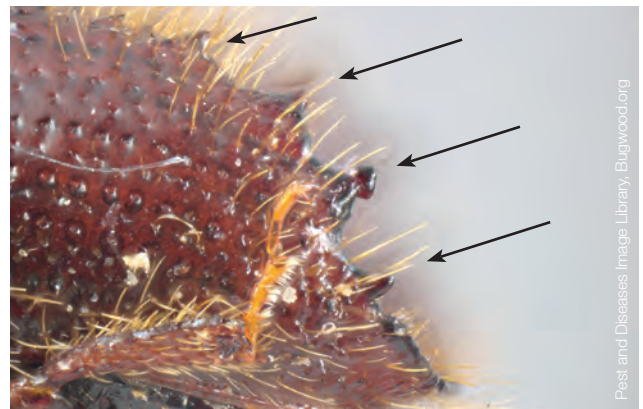
Symptoms

As with most bark beetles, it transmits Blue stain fungi (e.g. *Ceratocystis* and *Ophiostoma* spp.) which interfere with water translocation and prevent water transport to the foliage. Blue stain fungi also invade the sapwood, affecting the value and aesthetic qualities of milled timber.

Under low population levels, the crowns can appear a lighter green colour, and green needles can often be seen on the ground. In a mass attack the needles can turn reddish-brown in colour as a result of desiccation caused by the rapid spread of Blue stain fungi.



Lateral view of adult beetle



Elytral spines of European spruce bark beetle. Note 4 spines and club shaped third spine (arrows)



Elytral spines of European spruce bark beetle



Other symptoms of bark beetle attack include the presence of red-brown borer dust in bark crevices or at the base of the trunk and small pitch (resin) tubes extruding from the bark.

What it can be confused with

The *Ips* genus has more than 30 species and distinguishing between them can be difficult. The number and shape of the spines on their elytral declivity (the steeply sloped section at the back of their wing covers) is an important feature to distinguish between species of *Ips*. The third spine on each side of the elytral declivity of European spruce bark beetles is the largest one, and is club like on the tip. The Five-spined bark beetle (*Ips grandicollis*), which is established in Australia, has five of these spines.

Plant part affected

European spruce bark beetles prefer mature trees and usually infest the lower and middle parts of the trunk.

Time of year pest is most likely to be seen

In Europe, depending on the temperature, young adults normally emerge in spring and are capable of flying tens of kilometres to locate suitable host material.

Further information

Wermelinger B (2004) Ecology and management of the spruce bark beetle *Ips typographus* – a review of recent research. *Forest Ecology and Management* 202: 67–82.

Kimoto T and Duthie-Holt M (2006) *Exotic Forest Insect Guidebook 2006*. Canadian Food Inspection Agency. Available from www.inspection.gc.ca/plants/plant-protection/insects/eng/1307077188885/1307078272806

European spruce bark beetle. Pest and Disease Image Library (PaDIL). Available from www.padil.gov.au/pests-and-diseases/pest/main/135618



Larval galleries

Jan Liska, Forestry and Game Management Research Institute, Bugwood.org



External symptoms of attack (red-brown frass)

Daniela Lupascu, University of Suceava, Bugwood.org

If you see anything unusual, call the Exotic Plant Pest Hotline

**EXOTIC PLANT PEST HOTLINE
1800 084 881**

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