Red turpentine beetle

Description

Adult Red turpentine beetles (*Dendroctonus valens*) are relatively large (6–10 mm long) beetles, which have brown to black bodies with reddish-brown elytra (wing coverings). The larvae are C-shaped, legless and mainly white, with a distinct, dark head capsule, small dark patch at the tip of the abdomen and, in older larvae, a line of small darker tubercles (look like small spots) along the body.

A pair of adult beetles will feed on the phloem, forming an egg gallery. Up to one hundred eggs are laid in an elongated mass along the side of the galleries. Unlike other species of *Dendroctonus* and *Ips*, the larvae are gregarious, living in communal chambers within the phloem, often forming fan shapes with irregular margins as the larvae feed side by side in an irregular line. The galleries are not clean: they are usually packed with boring dust or frass.

Lateral view of adult beetle

Larval form of Red turpentine beetle

Primary hosts

This species is a widespread forest pest in Northern and Central America and was introduced into China in the late 1980s, presumably on unprocessed logs. It has been recorded on at least 40 species of conifer including species of Pine (*Pinus*), Larch (*Larix*), Fir (*Abies)*, and Douglas fir (*Pseudotsuga menziezii*). In North America, Ponderosa pine (*Pinus ponderosa*) is the species most frequently attacked, but Radiata pine (*P. radiata*) is the species most frequently killed.

In North America, the adults primarily attack freshly cut stumps or the bases of dying or stressed trees (e.g. pest, drought or fire affected trees). However, in China both stressed and healthy trees are attacked.

Red boring dust/frass at the base of an infested tree

Symptoms

Early symptoms include the presence of red boring dust and frass which collects in the bark crevices or drops to the base of the tree. Pitch tubes (resin mixed with frass) also form on infected trees. The pitch tubes are usually found up to a height of three metres above the ground and can vary in size, texture and colour depending on the host species.

Infested trees will have entire crowns or individual branches presenting symptoms. The foliage of infected trees becomes pale green then turns orange-red before being shed months later.

What it can be confused with

Red turpentine beetles can potentially be confused with the Five-spined bark beetle (*Ips grandicollis*) which occurs in Australia. The two species can be separated by their size (Red turpentine beetles are larger) and the shape of their wing covers.

Black pine beetle (*Hylastes ater*) and Golden-haired bark beetle (*Hylurgus ligniperda*) occur in Australia and also form galleries beneath the bark of stumps or the lower stems of weak, dying trees. However, the adults of both species are smaller than the Red turpentine beetle.

Plant part affected

Attacks on standing trees are concentrated on the lower trunk and exposed roots. When attacks are made just above the ground, the galleries may extend below the ground, along the larger roots.

Age of plant

This species does not attack seedlings or small trees. Trees usually require a stem of more than 20 cm DBH.

Time of year pest is most likely to be seen

During warmer conditions the adults will emerge, commonly from recently cut stumps or stressed/dying trees.

Further information

Pest and Disease Image Library (PaDIL) Red turpentine beetle. Available from **www.padil.gov.au/pests-and-diseases/pest/main/135644**

Global Invasive Species Database. *Dendroctonus valens* (insect). Available from **issg.org/database/species/ecology.asp?si=1405&fr=1&sts=&lang=EN**

Diagnostic protocol for the identification and detection of *Dendroctonus valens* LeConte (Red Turpentine Beetle). Prepared for the Subcommittee on Plant Health Diagnostic Standards. Available from **plantbiosecuritydiagnostics.net.au/wordpress/wp-content/uploads/2015/03/NDP-24-Red-turpentine-beetle-Dendroctonus-valens-V1.2.pdf**

Zhengliang Y, Jiangha S, Owen D and Zhongning Z (2005) The red turpentine beetle, *Dendroctonus valens* Le Conte (Scolytidae): an exotic invasive pest of pine in China. *Biodiversity and Conservation* 14: 1735–1760.

Pitch tubes on Ponderosa pine

Gregarious larval feeding chamber

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

EXOTIC PLANT PEST HOTLINE
1800 084 881

PHA14-019