Mountain pine beetle

Description

The Mountain pine beetle (*Dendroctonus ponderosae*) is considered the most destructive bark beetle pest native to western North America. The adults are stout, cylindrical, typically dark brown or black coloured beetles, ranging from 4–7.5 mm in length. There are four larval instars and a pupa. The larvae are white, without legs and look very similar to other bark beetle larvae. The mated females produce relatively straight, vertical egg galleries from which the developing larvae form perpendicular galleries. When mature, larvae construct oval pupation cells at the end of their tunnels before emerging through small exit holes as adults.

Lateral view of adult beetle

Primary hosts

It is estimated that this bark beetle has affected several million hectares of forest in north western USA and south western Canada, predominantly killing Lodgepole (*Pinus contorta*) and Ponderosa pine (*P. ponderosa*). Under normal conditions, attacks are generally restricted to senescent, stressed or damaged trees. However, under ideal conditions, more pine species become susceptible, including Loblolly (*P. taeda*), Slash (*P. elliottii*) and Caribbean (*P. caribaea*) pine, and healthy trees become vulnerable to attack.

Larval form of Mountain pine beetle

Symptoms

A large number of adult beetles can attack a single tree. The joint action of larval feeding and cambial colonisation by fungal species associated with the beetles can rapidly kill a host tree. Initially the crown remains green, then fades as the needles wilt and turn orange-red in colour. This distinctive crown colour can remain for many months before fading to brown-grey and then the needles fall to the ground.

Numerous small pitch tubes form on the bark of infected trees at the entrances to the beetle's tunnels. The pitch tubes consist of a mixture of resin and frass and vary in colour dependent on the host. Pitch tubes are typically found low on the tree.

Mountain pine beetles commonly transmit Blue stain fungi (e.g. *Ceratocystsis* and *Ophiostoma* spp.) which invade the sapwood, affecting the value and aesthetic qualities of milled timber.

Small resin 'pitch tubes'

What it can be confused with

Adult Mountain pine beetles are similar in appearance to Ips species, including the Five-spined bark beetle (*Ips grandicollis*). These can be distinguished by the shape of their elytra (wing covers). The Five-spined bark beetle has small spines on their elytra while Mountain pine beetles do not have spines.

Plant part affected

Successful galleries are usually found along the main trunk within a metre of the ground up to the middle branches.

Age of plant

Under normal conditions large diameter trees are preferred, but during outbreaks the beetles will attack smaller trees from approximately 12 cm DBH and larger.

Time of year pest is most likely to be seen

The overwintering adults emerge in warm conditions and fly to nearby un-infested trees. However, the adults are capable of flying up to 100 km under ideal conditions.

Further information

Pest and Disease Image Library (PaDIL) Mountain pine beetle. Available from **www.padil.gov.au/pests-and-diseases/pest/main/135643**.

Letherman DA, Aguayo I, Mehall TM (2014) Mountain pine beetle. Colorado State University. Available from **www.ext.colostate.edu/pubs/insect/05528.html**

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

EXOTIC PLANT PEST HOTLINE
1800 084 881

Small resin ‘pitch tubes’ on spruce

Larval feeding galleries

Infected trees showing leaf symptoms

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