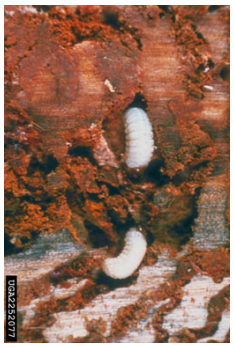
SOUTH DAKOTA DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES

Mountain Pine Beetle

(Dendroctonus ponderosae)





Tee infestations: Mountain pine beetles affect pine trees by laying eggs under the bark. The beetles introduce blue stain fungus into the sapwood that prevents the tree from repelling and killing the attacking beetles with tree pitch flow. The fungus also blocks water and nutrient transport within the tree. On the tree exterior, this results in popcorn-shaped masses of resin, called "pitch tubes", where the beetles have entered. The joint action of larval feeding and fungal colonization kills the host tree within a few weeks of successful attack. When the tree is first attacked, it remains green. Usually within a year of attack, the needles will have turned red. In three to four years after the attack, very little foliage is left, so the trees appear grey.

Life Cycle: Beetles develop through four stages: egg, larva, pupa and adult. Except for a few days during the summer when adults emerge from brood trees and fly to attack new host trees, all life stages are spent beneath the bark. In low elevation stands and in warm years, mountain pine beetles require one year to complete a generation. At high elevations, where summers are typically cooler, life cycles may vary from one to two years. Female beetles initiate attacks. As they chew into the inner bark and phloem, pheromones are released, attracting male and female beetles to the same tree. The attacking beetles produce more pheromones, resulting in a mass attack that overcomes the tree's defenses, and results in attacks on adjacent trees.

Dispersal: Western North America from Mexico to central British Columbia.

Hosts: Mountain pine beetles inhabit ponderosa, whitebark, lodgepole, Scots, jack, and limber pine trees.