Western ash bark beetle

Latin name: *Hylesinus californicus* [Swaine]

French name: Scolyte du frêne de l'Ouest

Order: Coleoptera

Family: Scolytidae

Description

Distribution

Western Canada

The western ash bark beetle is distributed throughout the western half of North America, from Manitoba to British Columbia, and south to Texas and Chihuahua, Mexico. In Canada this insect species has been recorded only in the southern half of the Prairie Provinces, but it may occur wherever ash is grown.

Micro-habitat(s)

Bark, phloem

Damage, symptoms and biology

Damage caused by the western ash bark beetle is usually confined to injured or weakened branches in tree crowns, but under outbreak conditions these beetles may also attack the trunks of both small and large, usually weakened, trees. New infestations of the beetles become visible by mid-to late May. At this time adult beetles bore through bark into the phloem layer, where they construct egg galleries that are horizontal tunnels, 3 mm in diameter and 3–8 cm long, in which they reproduce. Trees undergoing attack can be identified by the presence of 'tint' holes (about 2 mm in diameter) in the bark, especially in cracks and crevices, and by accumulations under the attack sites of dust caused by boring. Copious sap flow or 'bleeding' from these wounds is also easily visible from ground level on small to moderately large trees. Binoculars may be required to view symptoms in the crowns of large, mature trees. Later, transverse egg galleries are

indicated by the sunken, often cracked, and discoloured (reddish) bark and by a row of ventilation holes, about 2–3 mm in diameter and 8–10 mm apart, along the length of each gallery. The leaves of branches girdled by egg gallery construction start to turn yellow by late June or early July. During construction of overwintering chambers in the base of the trunks in September and October, dust from the boring of adult beetles accumulates on the ground at the base of the infested trees.

The beetle is usually present in low numbers and typically colonizes only damaged or recently dead host material such as limbs and branches damaged by wind, snow, or ice. If, however, a large amount of susceptible (i.e., weakened or dead) host material is created by wind and ice storms or drought, beetle populations may reach outbreak levels. Under outbreak conditions, beetles may cause considerable numbers of branches to die, resulting in loss of aesthetic and commercial value, and possible tree mortality.

Adult beetles are robust, oval, 2–3 mm long, and have a variegated white and brown colour. They overwinter in special chambers constructed in the bark on the lower 15 cm of ash boles. Beetles emerge from overwintering sites from mid-April to May and fly or walk up tree boles to the canopies. There they bore through the bark to feed, mate, and reproduce in the phloem layer of limbs and branches. Each female constructs a transverse egg gallery in the phloem and lays her eggs in small pockets along both sides of the gallery. Upon hatching in May, larvae feed until early July in the phloem, in a direction perpendicular to that of the egg gallery. Fully grown larvae are legless grubs, 4 mm long, with white bodies and brown heads; they pupate in mid-July. Adult development is completed by late July and August when new adults emerge from their galleries, relocate to uninfested parts of branches (usually in a crotch), enter the phloem layer, and feed for several weeks. From mid-September to early November adults stop feeding, emerge from the bark, and migrate by walking, falling, or flying to the base of ash trees where they overwinter.

Other information

Western ash bark beetle populations build up in weakened and recently dead host material; therefore, the elimination of this material is an important preventive measure. Regular watering and fertilization of trees, especially during drought periods, will help maintain tree health and improve their capacity to resist attack by pests. Regular pruning of dead, weakened, and crisscrossing branches will eliminate potential breeding sites for these beetles. All infested branches and trees should be removed before April and disposed of by burning or burying; chipping may not destroy all the brood. Watching for increases in beetle populations following the widespread weakening of ash after drought, wind, or ice storms may help with the early detection of problem areas. Very old ash trees are especially vulnerable to attack by these beetles and may serve as focal points for outbreaks that then spread to healthy trees. Weakened, older trees should be considered for removal.

Canadian Forest Service Publications

Western ash bark beetle (https://cfs.nrcan.gc.ca/publications/search?q=Western+ash+bark+beetle)

Diet and feeding behaviour

- **Phloeophagous** : Feeds on phloem.
  - **Borer**: Bores into and feeds on the woody and non-woody portions of plants.

Information on host(s)

It attacks mainly ash trees. On the Prairies, all ash species are susceptible, but green ash is most commonly attacked.

Main host(s)

American mountain-ash (https://tidcf.nrcan.gc.ca/en/trees/factsheet/71), ashes, black ash (https://tidcf.nrcan.gc.ca/en/trees/factsheet/27), blue ash (https://tidcf.nrcan.gc.ca/en/trees/factsheet/431), common prickly-ash (https://tidcf.nrcan.gc.ca/en/trees/factsheet/485), European ash, European mountain-ash, green ash (https://tidcf.nrcan.gc.ca/en/trees/factsheet/97), mountain-ash, Oregon ash (https://tidcf.nrcan.gc.ca/en/trees/factsheet/430), pumpkin ash (https://tidcf.nrcan.gc.ca/en/trees/factsheet/432), red ash (https://tidcf.nrcan.gc.ca/en/trees/factsheet/28), showy mountain-ash (https://tidcf.nrcan.gc.ca/en/trees/factsheet/72), Sitka mountain-ash (https://tidcf.nrcan.gc.ca/en/trees/factsheet/481), white ash (https://tidcf.nrcan.gc.ca/en/trees/factsheet/26)

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