

**Mini data sheet on Laurel wilt (*Harringtonia lauricola*)
and its vector (*Xyleborus glabratus*)**

Harringtonia lauricola) and its vector (*Xyleborus glabratus*) were added to the EPPO A1 List in 2026. A full datasheet will be prepared, in the meantime you can view here the data which was previously available from the EPPO Alert List (added to the EPPO Alert List in 2014 - deleted in 2026).

Why: In the Southeastern part of the USA, widespread mortality of redbay (*Persea borbonia*) has been observed since 2003. The disease has been called 'laurel wilt'. The cause of this tree mortality has been identified as *Raffaelea lauricola*, a fungus which serves as a food source for the redbay ambrosia beetle, *Xyleborus glabratus* (Coleoptera: Scolytidae). Recent taxonomic studies on the order Ophiostomatales have concluded that this fungus should be moved to a new genus and called *Harringtonia lauricola*. Both the pathogen and the insect vector originate from Asia and have shown invasive behaviour in the USA. In addition to *P. borbonia*, *H. lauricola* has been detected in avocado trees (*P. americana*) in Florida also causing a vascular wilt disease. As in the USA, both *H. lauricola* and its insect vector are perceived as a serious threat to the avocado fruit production, the EPPO Secretariat decided to add them to the EPPO Alert List.

Where: *X. glabratus* is native to Asia (India, Myanmar, Japan and Taiwan) where it infests aromatic tree species (mainly from the Lauraceae family). Studies of an insect collection in Beijing have shown that *X. glabratus* also occurs in China. *H. lauricola* has been isolated from *X. glabratus* beetles collected from Kyushu Island (Japan) and Taiwan. However, differences in the mycangial mycoflora of *X. glabratus* in Taiwan, Japan and USA, suggest that the *X. glabratus* population established in the USA probably originates from another part of Asia. In the USA, *X. glabratus* was first caught in May 2002 in a trap located at Port Wentworth (near Savannah, Georgia). Soon after, widespread mortality of redbay (*P. borbonia*) was observed in the coastal plains of Georgia and other US states. In 2007, *H. lauricola* was detected for the first time in an avocado tree in Jacksonville, Florida. As of July 2013, *H. lauricola* has been detected in 90 avocado trees in various commercial groves of Florida, and more than 1 900 symptomatic trees have been removed as part of a suppression and sanitation strategy. Interestingly, only 6 *X. glabratus* beetles could be caught in these avocado groves.

- ***R. lauricola***
EPPO region: absent.
Asia: Japan, Myanmar, Taiwan.
North America: USA (Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, New York, North Carolina, South Carolina, Tennessee, Texas, Virginia).
- ***X. glabratus***
EPPO region: absent.
Asia: Bangladesh, China (Fujian, Hunan, Sichuan), India (Assam, West Bengal), Japan (Kyushu), Myanmar, Taiwan.
North America: USA (Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas).

On which plants: laurel wilt has been observed in Lauraceae. In Asia, the fungus had only been detected in the vector up to 2026 when it was reported causing laurel wilt on avocado in Taiwan. *H. lauricola* infects *P. borbonia* (redbay), *P. palustris* (swampbay), *Sassafras albidum* and *P. americana* (avocado). In USA, *P. borbonia* and *P. palustris* are common,

shade tolerant, broadleaved evergreen trees of various forested habitats and residential areas of the Southeastern Atlantic coastal plain region. *H. lauricola* has also been isolated from *Lindera melissifolia*, *Litsea aestivalis* and *Lacaria trianda* which are considered as endangered species but the impact of laurel wilt on these trees remains uncertain. In 2013, a single *Laurus nobilis* tree was found infected in Florida.

In its native range, *X. glabratus* is often associated with Lauraceae (e.g. *Cinnamomum camphora*, *C. osmophloeum*, *Lindera latifolia*, *Litsea elongata*, *Machilus nanmu*, *Phoebe lanceolata*, *Phoebe neurantha*, *Phoebe zhennan*). However, it is also found on trees belonging to other plant families such as: *Leucaena glauca* and *Lithocarpus edulis* (Fagaceae), *Schima superba* (Theaceae), *Shorea robusta* (Dipterocarpaceae). In the USA, *X. glabratus* has been found attacking *P. americana* (avocado), *P. borbonia* (redbay), *P. palustris* (swampbay) and *Sassafras albidum*.

Damage: symptoms of laurel wilt are typical of those that are caused by other vascular wilt pathogens: vascular black discoloration, rapid wilting, necrosis of foliage and defoliation. It has been shown that xylem function and hydraulic conductivity were significantly impaired by *H. lauricola* infection. Glasshouse and field experiments conducted on several avocado cultivars have also shown that a single inoculation resulted in most cases, in extensive colonization and symptom expression. It is not known how many individuals of *X. glabratus* are needed to result in lethal infection, but observations suggest that one or only a few beetles are required. Laurel wilt has caused widespread mortality of *P. borbonia* and *P. palustris* in the USA, killing nearly all trees within 3-5 years after *X. glabratus* becomes established and detected. In some areas, up to 90% tree mortality has been noticed. In some areas in Georgia, the composition of forest communities was altered by *H. lauricola*, as after the destruction of *P. borbonia*, other tree species (e.g. *Magnolia virginiana* and *Gordonia lasianthus*) became dominant.

X. glabratus makes pinhole-sized entrance holes in the bark that either bleed or produce light-coloured boring dust. It bores characteristic galleries in the wood of infested trees. *X. glabratus* can produce frass tubes that resemble 'tooth picks' extending out from the bark. However, it is more common to see piles of sawdust around the base of the tree than the tubes themselves. Adults are small beetles, 2-3 mm long, slender, and brown-black in colour. Larvae are white coloured, c-shaped, legless with an amber-coloured head capsule. Little information is available about the life cycle of *X. glabratus*. Generation time is uncertain but observations indicated that brood development can occur in 50-60 days in Southeastern USA. Ambrosia beetles are usually found on dead or weakened trees, but *X. glabratus* is able to attack healthy trees. It is considered that young trees with a diameter less than 2.5 cm cannot sustain populations of *X. glabratus*.

Dissemination: *H. lauricola* moves primarily via its vector, *X. glabratus*. Fungal spores are carried in the insect mycangia (specialized structures found at the base of each mandible) and are dispersed in the xylem as the adult female constructs her galleries and lay eggs. Adults and larvae feed on the conidia produced by the fungus. In the USA, it is suspected that *X. glabratus* (carrying *H. lauricola*) was introduced with wood packing material from Asia. Once introduced, the movement of infested firewood is considered to be an important means of dissemination within the USA. The survival of *X. glabratus* and *H. lauricola* in wood chips made from infested *P. borbonia* trees has been studied. Chipping can significantly reduce the number of *X. glabratus* and limit the persistence of *H. lauricola* but does not completely eliminate them.

Pathway: Plants for planting, wood and bark, wood chips, wood packaging material of host trees from countries where *H. lauricola* and *X. glabratus* occur. According to preliminary studies, avocado fruit is not a pathway.

Possible risks: Avocado is not widely grown in the EPPO region but is of economic importance at least in Israel and Spain. Laurel forests (including Lauraceae genera such as *Apollonias*, *Ocotea*, *Persea*) are found in the Azores, Madeira (PT) and Islas Canarias (ES). Although their susceptibility to *H. lauricola* and *X. glabratus* is not known, they are of high patrimonial value. The recent detection in Florida of the disease on *L. nobilis*, a species originating from the Mediterranean area and widespread in Europe, is of concern. The insect vector, *X. glabratus* has cryptic habits and is therefore difficult to detect. In the USA, laurel wilt is perceived as a serious threat to the avocado production. In Florida, expected losses in the absence of control measures were estimated at 27 to 54 million USD. In infected avocado groves, control strategies rely on the following methods: destruction of infected trees, control of *X. glabratus* (insecticides, attractants (e.g. manuka and phoebe oil lures) or repellents), and severing of root grafts. For the moment, it seems that no tolerant or resistant avocado cultivars are available.

Finally, recent studies have shown that the transfer of *H. lauricola* from diseased trees to insects other than *X. glabratus* was possible (e.g. *Xyleborus affinis*, *Xyleborus bispinatus*, *Xyleborus ferrugineus*, *Xyleborus volvulus*, *Xyleborinus gracilis*, *Xyleborinus saxeseni*, *Xylosandrus crassiusculus*, and a non-ambrosia beetle *Apteromechus ferratus*), and that transmission to healthy trees was in some cases obtained. Although more studies are needed to confirm these preliminary results, this indicates that 'new' vectors might play a role in the disease epidemiology. Considering the significant mortality observed in the USA on several Lauraceae species and the general lack of effective control measures, it is desirable to avoid the introduction of *H. lauricola* and its vector, *X. glabratus* in the EPPO region.

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