IPSN International Plant Sentinel Network

BOTANIC GARDENS CONSERVATION INTERNATIONAL

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For more information on the described organism, scan or click on the QR code to access the accompanying factsheets.

Sooty bark disease (*Cryptostroma corticale*)

Background

Sooty bark disease (SBD) is caused by the fungus *Cryptostroma corticale*, first described in North America, but since the 2000s recorded in Central and Western Europe [see distribution].

The disease leads to dieback and ultimately death of maples (*Acer* spp.), primarily affecting sycamores (*Acer pseudoplatanus*). Damage is associated with raised summer temperatures (25°C) and drought, which has lead to increasing concerns due to recent hot dry summers and future climate change impacts. The fungus is considered an opportunistic latent pathogen. During its latent state it can grow longitudinally progressively colonizing the wood, but heat and host drought stress can trigger its pathogenic and saprophytic phases, facilitating the sooty bark disease symptoms to appear in the bark.

Spores of *C. corticale* can also cause human health problems. Although uncommon, exposure to large volumes of spores can cause maple bark stripper's disease (a form of hypersensitivity pneumonitis) in some individuals.

Symptoms

- Wilting and dieback, including tree death (Fig 1a, b).
- Symptoms are frequently seen in upper limbs, but all above parts of the tree can show symptoms (Fig 2).
- Bark cracking, blistering, and bark easily peeling (Fig 3a, b), with dark brown to black powdery spore masses or sooty-like patches erupting through the shedding bark (Fig 4a, b, c).
- In early SBD stages, minor necrotic areas appear on the tree (Fig 5a). Advanced stages exhibit extensive bark lesions (Fig 5b). Severely infested trees may be partially or completely dead, with sporulating lesions on the trunk and stems (Fig 5c).
- When seen is cross section, dark staining in the heartwood is observed (Fig 6a,b,c).

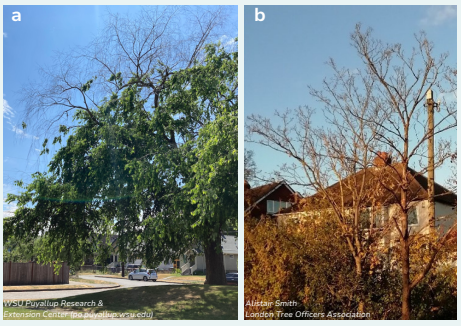

Fig 1. a, b) *Acer pseudoplatanus* trees with SBD showing aerial dieback.

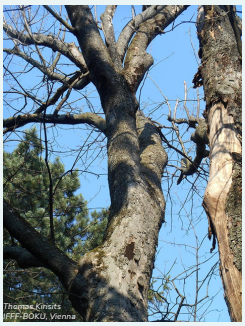

Fig 2. *Acer pseudoplatanus* showing spore masses of *Crytostroma corticale* up and down the stem and branches where bark has shed.

Fig 3. a, b) Bark of *Acer pseudoplatanus* blistering and peeling easily.

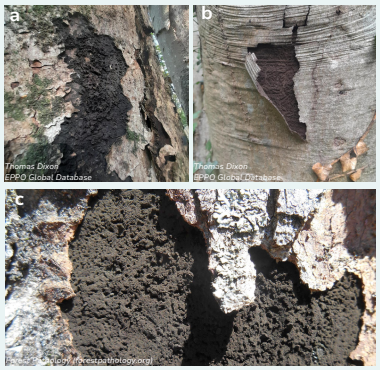

Fig 4. a, b, c) Dark brown masses of *Crytostroma corticale* spores underneath peeling bark.

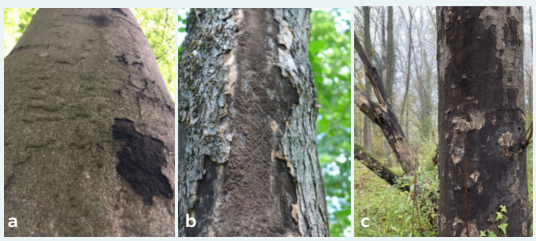

Fig 5. a, b, c) Different degrees of damage by SBD on *Acer pseudoplatanus (Kespohl et al. 2022, Front. Public Health)*.

Fig 6. a, b, c) Cross-section of *Acer pseudoplatanus* stem showing stain.

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