

# Landscape tree disease from 12 wood decay fungi studied

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Landscape trees, valued for their aesthetic nature and their environmental benefits, are becoming increasingly valuable in urban environments. A single mature tree can add considerable value to commercial and residential properties. Conversely, tree mortality can result in significant economic losses. Urban trees must endure adverse growing conditions that reduce their structural strength and subject them to stresses, predisposing them to disease. One particularly devastating pathogen, wood-rotting fungi, can compromise the stability of urban trees, resulting in injuries to people and property damage from falling trees and limbs. Wood decay fungi are the primary and most common cause of failure in standing trees.

A study in *HortScience* investigated the in vitro development of decay caused by 12 major root-rot and trunk-rot fungi in sapwood extracted from nine ornamental and landscape tree species native to southern temperate forests in the Mississippi Delta region. Scientists Manuela Baietto and A. Dan Wilson compared the relative wood decay potential and host specificity of damage associated with these wood-rotting fungi, and determined the relative in vitro susceptibility or resistance of sapwood from each tree species to decay over 1-year and 2-year incubation periods.

Strains of *Armillaria mellea*, *Ganoderma lucidum*, and *Heterobasidion annosum* exhibited the highest decay potential in most [tree species](#) tested. According to the study, the order of fungi causing the greatest decay varied over time as a result of temporal changes in decay-rate

curves. Relative wood durability or resistance to decay generally was greater in gymnosperm than in angiosperm wood types. *Quercus nuttallii*, *Fraxinus pennsylvanica*, and *Quercus lyrata* sustained the highest levels of decay by all [fungi](#). Northern white cedar (*Thuja occidentalis*) sapwood was most resistant to decay by all rot-fungi tested, sustaining only limited weight loss after 1 and 2 years of decay, although sapwood of *Pinus taeda*, *Liquidambar styraciflua*, and *Platanus occidentalis* had relatively low levels of decay after 2 years.

Baietto and Wilson observed that the data from their study will be useful in making general assessments of the hazard status of individual urban tree, and can be combined with data from urban tree assessment surveys to predict future tree failures and estimate potential damage from falling tree parts. The information is useful for urban forestry professionals in developing individual tree inspection and maintenance schedules that help avoid personal and property damage resulting from structural failures of landscape trees.

**More information:** [hortsci.ashspublications.org/c ...  
nt/abstract/45/3/401](https://hortsci.ashspublications.org/content/abstract/45/3/401)

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