

UPDATED EDITION
Expanded with
50 Different Fungi

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Wood Decay Fungi, Second Edition

Written specifically for arborists and urban tree managers, the popular Wood Decay Fungi Common to Urban Living Trees in the Northeast and Central United States has been completely updated and rewritten.

Common to Urban Living Trees
in the Northeast & Central United States

- 145 Pages and over 325 color images
- 8.5 by 11, Wire-coil bound, laminated cover
- Over 50 different decay fungi common on urban trees
- An introduction to wood decay fungi biology, pathology, and identification

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Sample Pages

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Left: Habit of *D. caespitosa* on a white oak showing clusters both at the base of the tree and further away attached to a root. The tree was in a declining state of health. Right: Closeup of an older cluster at the base of the oak. Note the light-brown color of the caps and absence of a ring around the stem that is found on *Armillaria mellea*. (NY, Oct.)



Left: A declining silver maple with several groups of *D. caespitosa* fruiting on roots at a substantial distance from the trunk (arrow). Right: Closeup of top of cluster taken from the lawn. (NY, Aug.)



Cluster from the photo above right showing white context below cap and absence of a ring around the stem. (NY, Aug.)



A group of *D. caespitosa* showing the white spore print that was deposited below an overlapping cap. (PA, Oct.)
Inset: White spore print made from a cap of *D. caespitosa*.

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Scientific Name: *Desarmillaria caespitosa*

Other Scientific Names	Common Names	Common Hosts
<ul style="list-style-type: none"> » <i>D. tabescens</i> is now used for the European species of this pathogen. » <i>Armillaria tabescens</i> » <i>Clitocybe tabescens</i> 	<ul style="list-style-type: none"> » Mushroom root rot » Clitocybe root rot » Ringless <i>Armillaria</i> 	Wide host range, including hardwoods and conifers. In the Northeast, maples and oaks are the most common hosts. Reported from more than 210 plants species in 60 families and 137 genera (Rhoades 1950), including shrubs, deciduous and coniferous trees, grapes, and fruit trees.
Decay Type & Location	Habit	Perennial or Annual
White rot of roots; decay of butts appears relatively rare.	Fruiting from roots at a distance from the plant, or from buttress roots or base of the tree or shrub. Seldom if ever found higher on the trunk.	Annual. June and into the fall but typically August or later in the Northeast; in warmer climates like Florida, it may fruit in most seasons.

Mode of Action

Facultative pathogen. Root killing (infecting and killing bark and cambium) is more important typically than decay of woody tissues. *D. caespitosa* also can attack and kill the bark and cambium of buttress roots and the root collar. Infections that kill roots can extend to the root collar and cause cankers or dead areas on some species. The fungus can both infect wounds or penetrate intact roots directly. Mycelial mats or fans are common on infected tissues when bark is removed. Rhizomorphs are not formed in nature. Decay of woody roots is also possible.

Frequency

Common in southern and southeastern states; apparently less common in the Northeast, especially compared to *A. mellea*. In Florida, Rhoades (1950) believed *D. caespitosa* predominated compared to *A. mellea* because of higher temperature tolerance. *D. caespitosa* appears to be more aggressive in southern states and may be less pathogenic in more northern states.

Identifying Features

- » Gilled mushrooms in caespitose clusters of 5-30 mushrooms
- » Individual caps 3-10 cm (1-4 inches) wide, convex when young but flattening and possibly concave with age
- » Caps yellow-brown, pinkish-brown, honey brown to yellow in color appearing similar to *A. mellea* from the top
- » Lacking a ring around the stem
- » Central stem 5-20 cm (2-8 inches) long, white but brown or darkening near the base
- » Context white
- » Gills, white to slightly pink or light brown, slightly running down the stem and darkening with age
- » White or light cream-colored spore print

Importance

Primarily a root killer and secondarily a root decay pathogen, this fungus has a wide host range, and in urban environments, trees affected by *D. caespitosa* may get removed because of decline or death before decay of roots becomes a serious issue. However, Sinclair and Lyons (2005) reported that windfall is possible due to root decay. Many reports indicate *D. caespitosa* can kill young trees on forested sites that were recently cleared and replanted. As with *Armillaria* species, host stress can be a predisposing factor to infection and impact by *D. caespitosa*.

Notes

I encounter *D. caespitosa* fairly frequently on urban trees in the Northeast in the late summer and fall. In most cases the trees have not been noticeably affected, supporting the observation that the fungus is less pathogenic in northern states, although I have observed trees in decline with *D. caespitosa*. However, clearly *D. caespitosa* is an important root-killing pathogen in southern states, where numerous reports exist of it causing decline and death of landscape plants. Clusters of mushrooms may develop at distances from the trunk on infected trees and could be overlooked as a result. *D. caespitosa* is a good example of how the vague use of the term root rot can mislead arborists. Root rot caused by *D. caespitosa* means the fungus is primarily killing bark and cambium and killing roots, as opposed to being a root decaying pathogen.

Antonin, V. J. E., Stewart, R. M., Ortiz, M., Kim, P., Bonello, M., Tomsofsky, and N. Klopfenstein. 2021. *Desarmillaria caespitosa*, a North American variant of *D. tabescens*. *Mycologia* 113:776-790.

Rhoades, A. S. 1950. Clitocybe root rot of woody plants in the Southeastern United States. Circular No. 853. USDA, Washington, DC. 26 pp.

Sinclair, W.A., and H.H. Lyons 2005. Diseases of trees and shrubs. Second Edition. Cornell University Press. Ithaca, NY. 660 pp.