



**Fig. 1.** *Armillaria*; impact on native bushland (a); Symptoms of necrosis on tree (b); and basidiomes (c). Photo credits C. Dunne (a), C. Crane (b) and R. Robinson (c).

**Common Name:** Australian Honey fungus

**Disease:** Armillaria root rot

**Classification:** K: Fungi, D: Basidiomycota, C: Homobasidiomycetes, O: Agaricales, F: Marasmiaceae

*Armillaria luteobubalina* (Fig. 1) is a native fungal pathogen common across Southern Australia. The pathogen is widely distributed in wet and dry sclerophyll forest, and eucalypt woodlands. In the southwest of Western Australia it also occurs in the coastal dune system. Members of the *Armillaria* genus are long lived and form some of the largest living organisms in the world. In North America, a single clone of *Armillaria ostoyae* occurs over an area of 8.9 km<sup>2</sup> and is thousands of years old.

**Host Range:**

*A. luteobubalina* is a primary pathogen of more than 50 different plant families and more than 200 plant species. The majority of susceptible native plant species are in the Proteaceae, Myrtaceae, Papilionaceae, Epacridaceae and Mimosaceae.

**Impact:**

In undisturbed ecosystems, *A. luteobubalina* infects and contributes to the death of trees and other plants that have been weakened or stressed by factors such as drought or lack of light. However, in disturbed environments such as managed native forests, plantations or parks and gardens, *A. luteobubalina* can become a destructive and aggressive pathogen. In managed forests, Armillaria root disease accounts for significant loss in wood volume due to mortality and defect and in stressed or unstable environments causes a dramatic decrease in the structure of native plant communities when susceptible overstorey species are killed. In

coastal heath and woodlands, the loss of overstorey species may lead to increased weed invasion and dominance of sedges and creepers.

**Key Distinguishing Features:**

In early autumn, clusters of large fruit bodies may develop at the base of infected or dead trees or from major lateral roots. Thick white mycelial sheathing may be seen under bark tissue near the base of infected plants (Fig. 1b). In culture, *A. luteobubalina* produces abundant rhizomorphs.

**Control:**

No chemical control methods are available. There is some potential for biological control using antagonistic micro-organisms. Since the disease spreads by root-to-root contact, the most effective method to prevent its spread is the removal of infected and dead trees, including stumps and infected roots. Trenching may be used in parks and gardens to isolate infected trees and prevent spread into healthy sections of the garden.

**Further Reading:**

- Robinson (2003) *Forest Ecology and Management* **176**, 417-426.
- Shaw, Kile (1991) *Armillaria Root Disease*. Forest Service, United States Department of Agriculture. Washington, D.C.
- Shearer, Tippett (1988) *Australian Journal of Botany* **36**, 433-445.
- Shearer *et al.* (1997) *Australian Journal of Botany* **45**, 151-165.
- Shearer *et al.* (1997) *Australian Journal of Botany* **45**, 905-917.

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