

# 10

## Wood degrading fungi

---

Salmiah Ujang<sup>1</sup>, Andrew H.H. Wong<sup>2</sup> and E.B. Gareth Jones<sup>3</sup>

<sup>1</sup>Mycology Laboratory, Forest Research Institute Malaysia (FRIM), Selangor, Malaysia

<sup>2</sup>Wood Biodeterioration and Protection Laboratory, Faculty of Resource and Technology, Universiti Malaysia Sarawak, 94300 Kota Samarahan, Sarawak, Malaysia; e-mail: awong.unimas@gmail.com

<sup>3</sup>BIOTEC Central Research Unit, National Centre for Genetic Engineering and Biotechnology, NASDA, 113 Phaholyothin Road, Khlong 1, Khlong Luang, Pathum Thani 12120 Thailand; e-mail: bhgareth@yahoo.com

This chapter gives an account of wood biodegradation, particular decay studies in Malaysia which has focused on evaluating the wood decay potential of selected basidiomycetes (brown and white rot fungi), ascomycetes and anamorphic fungi (sap stain fungi and soft rot species) and in relation to wood protection. Studies of lignin degrading enzymes produced by selected basidiomycetes are at an early stage of research in Malaysia and further studies are warranted. Tests to determine the durability of bamboo to wood decay fungi have been undertaken and results indicate that it falls between that of birch and pine, largely attributed to the lignin content of each timber.

**Key words:** biotechnological application, durability of bamboo, lignin degrading enzymes, wood durability, wood decay: white, brown, sap stain and soft rot attack

### General introduction

Wood is one of the most useful naturally occurring building materials but as an organic, heterogeneous and biodegradable material it is also a potential source of food for wood destroying organisms such as fungi (Rayner and Boddy, 1988; Eaton and Hale, 1993). Fungi have the capability to break down the complex polymers which make up the wood structure. Some timber species have evolved to produce compounds that can protect the wood, but decay resistance may vary among tree species, individual trees, and within an individual tree (Wong *et al.*, 1984; Eaton and Hale, 1993). Every Malaysian wood species differs in its natural durability level (Ling, 1996; Wong *et al.*,

---

Salmiah, U., Wong, A.H.H. and Jones, E.B.G. (2007). Wood degrading fungi. In: *Malaysian Fungal Diversity* (eds. E.B.G. Jones, K.D. Hyde and S. Vikineswary). Mushroom Research Centre, University of Malaya and Ministry of Natural Resources and Environment, Malaysia: 163-183.