

***Pleurostomophora richardsiae* associated with decaying woods in a dry zone forest of Sri Lanka**

R. H. Bandara, S. R. A. S. Deraniyagala and R. N. Attanayake*

*Department of Botany, Faculty of Science,
University of Kelaniya, Sri Lanka
renuka@kln.ac.lk*

Wood decay is a biological process by which cellulose and lignin are converted into carbon dioxide and water. This process is important for forest sustainability since it uses cellulose and lignin, the two most abundant organic compounds on earth to recycle nutrients. Nearly 83% of the total forest coverage in Sri Lanka is comprised with dry mixed forests and these forests are rich in hard wood bearing plant species such as *Diospyros ebenum*, *Manilkara hexandra* and *Drypetes sepiaria*. Therefore, fungi associated with decaying these hard wood species should also be efficient lignin and cellulose degraders with possible biotechnological importance. The objective of the current study was to identify such decaying wood-associated fungi found in a dry zone forest using DNA barcoding approach and to maintain these cultures for future research. Decaying hard wood pieces were collected from the forest floor of Dimbulagala forest reserve and brought to the laboratory. Wood pieces were surface sterilized, cut into small pieces, plated on selective PDA media. Pure cultures of fungi were obtained and morphological characterization was done. For molecular characterization, fungal mycelia grown in PDB were subjected to total genomic DNA isolation. Fungal rDNA-ITS region was amplified and sequenced from both directions. Sequences were manually edited and BLASTN searches revealed that *Trichoderma* species and *Lasiodiplodia* species were among the frequently found species. Species delineation of certain fungal isolates were challenging and therefore, molecular phylogeny based identification was applied. Maximum Likelihood method based on the Kimura 2-parameter model was used and interestingly *Pleurostomophora richardsiae* (isolate name DDW 05), a possible plant pathogenic fungus, was found to be associated with a decaying hard wood sample. *P. richardsiae* has been reported to cause grapevine dieback and cankers in Italy and Spain. This finding is interesting since forest dieback has long been an unidentified problem in Sri Lanka and it could be possible that *P. richardsiae* is among the organisms causing forest dieback and cankers in Sri Lanka. Previous reports also show that this fungus has been isolated from wood, ground wood pulp, sewage and soil in North America, Europe, Africa and several countries in Asia. Therefore, further research is needed to confirm the pathogenicity of the isolate.

Keywords: rDNA ITS, *Pleurostomophora richardsiae*, DNA barcoding

Acknowledgement: Funding from University of Kelaniya (Research project # RP/03/02/01/02/2015) and support from Biodiversity Secretariat is acknowledged.