

Phylogenetic complexity of *Lasiodiplodia* species found in Sri Lankan dry zone forests

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Lasiodiplodia is a common genus frequently found in tropical and subtropical ecosystems. The most common species, *L. theobromae*, is known to cause dieback, cankers, root rot, fruit rots, leaf spot and witches' broom in plants. Even though it is a wide spread fungus and reported as a pathogenic species in Sri Lanka, no DNA based identification has been done in Sri Lanka. Burgess and Barber¹ reported three new cryptic species by using molecular phylogenetic analysis. In a survey for wood decaying fungal species present in Sri Lankan dry zone forests, several fungal species resembling *Lasiodiplodia* were found and research was initiated to determine whether they were a single species or several species. Fungal strains DW10, ADW8, ADB4, DB8, and DW7 had similar morphology. Their colony characteristics were approximately similar. Total genomic DNA was extracted and Polymerase Chain Reaction (PCR) was done to amplify fungal ITS region. Pure PCR products were sequenced at the GenTech Inc. Colombo. Sequences were manually edited using BioEdit and Basic Local Alignment Search Tool was used to search for similar sequences present in the GenBank. Molecular phylogenetic analysis with the currently available sequences were done using MEGA ver. 6. Maximum Likelihood phylogenetic analysis was conducted to resolve the phylogenetic relationships among them. Based on the results, DW10 clustered with a Swedish isolate named *L. pseudotheobromae* (FJ904835) as well as with a Chinese isolate (KF294006) of *L. theobromae* with a high bootstrap support. Therefore, further analysis is required to resolve whether *L. pseudotheobromae* is present in Sri Lanka. ADW8 clustered with *L. theobromae*. Interestingly, DW7 and DW8 both clustered with *L. crassispora* with a strong bootstrap support. This is the first report of *L. crassispora* in Sri Lanka. Aldridge *et al.*² have isolated several secondary metabolites such as lasiodiplodin, de-O-methyl-lasiodiplodin, cis-4-hydroxymellein, indole-3-carboxylic acid, 3-formylindole, Mellein and ethyl hydrogen fumarate from *L. theobromae* isolates and it may be worth investigating Sri Lankan isolates for metabolites with biotechnological applications.

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References

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2. D. C. Aldridge, S. Galt, D. Giles and W. B. Turner. Metabolites of *Lasiodiplodia theobromae*, *Journal of the Chemical Society*, 1971, 1623-1627.