Foliar Endophytic Fungi Associated with Mangrove Plants in the Negombo Estuary, Sri Lanka

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Fungi and other microorganisms inhabit mangrove tissues as endophytes, establishing symbiotic associations that contribute to host growth, adaptation, and defense against biotic and abiotic stresses. This study aimed to isolate and identify foliar endophytic fungi associated with selected mangrove plants from the Kadolkele region of the Negombo Estuary, Sri Lanka. Healthy leaves were randomly collected from the mangrove plants *Excoecaria agallocha, Avicennia marina, Xylocarpus granatum,* and *Lumnitzera racemosa* at the location 7°11'44.76"N; 79°50'35.64"E. Fragments of healthy mangrove plant leaves were surface sterilized in a sodium hypochlorite solution and 70% ethanol and placed on potato dextrose agar. Endophytic fungi were isolated on potato dextrose agar from healthy leaf tissues of four mangrove plant species. Four morphologically distinct fungal isolates were selected, and genomic DNA was extracted from each isolate by a cetyltrimethylammonium bromide (CTAB) based extraction method. The Internal Transcribed Spacer (ITS) region of the fungal ribosomal rRNA gene was amplified by PCR using primers ITS-1 (5'-TCC GTA GGT GAA CCT GCG G -3') and ITS-4 (5'-TCC TCC GCT TAT TGA TAT GC -3'). The PCR amplicons were bidirectionally sequenced. The sequences were searched over the GenBank database at NCBI (National Center for Biotechnology Information), and isolates were identified as *Phyllosticta capitalensis*, from *Exoecaria agallocha*, *Colletotrichum avicenniae* from *Avicennia marina*, *Colletotrichum siamense* from *Xylocarpus granatum,* and *Diaporthe caricae-papayae* from *Lumnitzera racemosa*. All the above-mentioned fungi except *Diaporthe caricae-papayae* have previously been reported to be associated with mangrove plants in other countries. This study concludes that the above-mentioned fungi species are associated with the selected mangrove plants as foliar endophytes, in the Kadolkele region of the Negombo Estuary, Sri Lanka.

Keywords: *Mangrove plants, Endophytic fungi, Negombo estuary, Internal transcribed spacer, Bidirectional sequencing*