

Endophytic fungal communities in woody perennials of three tropical forest types of the Western Ghats, southern India

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Abstract Fungal endophytes of tropical trees are expected to be exceptionally species rich as a consequence of high tree diversity in the tropics and the purported host restriction among the endophytes. Based on this premise, endophytes have been regarded as a focal group for estimating fungal numbers because their possible hyperdiverse nature would reflect significantly global fungal diversity. We present our consolidated ten-year work on 75 dicotyledonous tree hosts belonging to 33 families and growing in three different types of tropical forests of the NBR in the Western Ghats, southern India. We conclude that endophyte diversity in these forests is limited due to loose host affiliations among endophytes. Some endophytes have a wide host range and colonize taxonomically disparate hosts suggesting adaptations in them to counter a variety of defense chemicals in their hosts. Furthermore, such polyphagous endophytes dominate the endophyte assemblages of different tree hosts. Individual leaves may be densely colonized but only by a few endophyte species. It appears that the environment (the type of forest in this case) has a larger role in determining the endophyte assemblage of a plant host than the taxonomy of the host

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