**Abstract**

A survey of 35 tree species (belonging to 28 genera in 19 families) in Aliyar, South India was carried out to ascertain their arbuscular mycorrhizal (AM) and dark septate endophyte (DSE) fungal status. All the tree species examined had AM association. AM and DSE colonization is reported for the first time in 20 and 14 species respectively. Cooccurrence of AM and DSE was observed in 14 (40%) tree species. The extent of DSE colonization was inversely related to the extent of AM fungal colonization. Six tree species had *Arum*-type, 18 had intermediate type and 11 had typical *Paris*-type AM morphology. AM fungal spore morphotypes belonging to 11 species in two genera were isolated from the rhizosphere soil. AM fungal spore numbers were not related to the extent of AM colonization and *Glomus* dominated spore diversity. AM association individually and along with DSE were found respectively in the 63% and 44% of the economically important tree species. The occurrence of AM and DSE fungal association in economically important indigenous tree species indicates the possibility of exploiting this association in future conservation programmes of these species.