**Abstract**

We examined the extent and type of arbuscular mycorrhizal (AM) and dark septate endophyte (DSE) fungal associations in three lycophyte and 44 fern species collected from three different sites in the Kolli Hills, Eastern Ghats, southern India. Of the 47 plant taxa (belonging to 21 families and 33 genera) examined, 46 had AM fungal and 33 had DSE fungal associations. But, fungal structures were absent in the aquatic fern Azolla pinnata (Azollaceae). This is the first report of AM and DSE fungal status for 16 and 28 species, respectively. Among terrestrial lycophytes and ferns, 26 species had dual association of both AM and DSE fungi, whereas 11 species had only AM fungal association. Vittaria elongata from epiphytic habitats had dual association of AM and DSE fungi. Likewise, Cheilanthes tenuifolia (saxicolous or terrestrial), Cheilanthes opposita, Lepisorus nudus, Pyrrosia lanceolata (terrestrial or epiphytic), and Asplenium lanceolatum (saxicolous or epiphytic) examined from different sites or habitats also had dual association of AM and DSE fungi. Seventy two percent of the mycorrhizal lycophytes and ferns had intermediate-type AM and 15 percent had both Paris- and intermediate-types at different sites. Significant variations in AM fungal structures were evident in 16 ferns occurring in two or more sites. Nine AM fungal spore morphotypes belonging to Acaulospora, Funneliformis, Glomus, Gigaspora, and Sclerocystis were found to be associated with lycophytes and ferns.