**Abstract**

We assessed the arbuscular mycorrhizal (AM) and dark septate endophyte (DSE) fungal associations in 57 ferns and 3 lycophytes (belonging to 15 families in 39 genera) of different life forms (epiphytic, saxicolous and terricolous) occurring in Palni Hills of Western Ghats. Fungal symbiosis was absent in all the three lycophytes examined. Fifty-five of the 57 ferns (91.66 %) examined had AM and 37 (64.91 %) had DSE fungal association. This is the first report on AM and DSE fungal association for 22 and 30 species, respectively. In addition, AM morphology was evaluated for the first time in 34 species. Sixty-five percentage of the mycorrhizal ferns had intermediate- type AM and 19.30 % had typical Paris-type AM morphology. Both Paris- and intermediate-type AM morphologies were observed in 10.53 % of ferns. The root length colonized by AM and DSE fungal structures significantly varied among species, and a significant negative relation existed between the root length colonized by AM

and DSE fungi.