ABSTRACT

This research was conducted to find the microbial associates of *Platycladus orientalis*. In this research work *P. orientalis* grown in two different ecological zones of Pakistan were selected viz., Ziarat (site1) and Lahore (site2). This study was conducted to find the mycorrhizal status of selected plant, for the first time it was investigate that the *P. orientalis* is the endomycorrhizal plant. Percentage of root infection for both sites were calculated it in terms of frequency of mycorrhization (F%) and intensity of mycorrhization (M%) results showed that the rhizosphere of *Platycladus* grown in Ziarat was more infected with VAM than rhizosphere of *Platycladus* grown in Lahore. Thirty seven (37) species of VAM fungal spores belonging to six genera (*Glomus*, *Gigaspora*, *Scutelllospora*, *Acaulospora Seploglomus*, and *Racocetra*) were isolated from the mycorrhizospheric soil of this plant. Out of these thirty seven, fifteen species along with two genera are the new record for Pakistan. This studies revealed the presence of 16 species of filamentous fungi belonging to 10 genera., *Pythium, Mucor, Rhizopus, Cladosporium, Aspergillus, Coccidiodes, Emericell, Gliocladium, Penicillium* and *Trichoderma*) out of these 16 species two (2) species are new to science named as *Aspergillus pseudoniger* nom. prov., and *A. Pakistanicus* nom. prov., from its rhizosphere. Two genera *Coccidiodes* and *Pythium* and five fungal species isolated during this research are the new record for Pakistan. Twenty bacterial strains were isolated, of both gram negative and positive types with different metabolic pathways, motile and non-motile in nature. 16S and ITS DNA sequencing of some selected samples were done in this work. Graphical representation of distribution, density, frequency of bacteria and fungi is provided. A comparison of new species with closely related taxa is also given for those isolates which seems new to science.