DIVERSITY AND USE OF ECTOMYCORRHIZAL FUNGI IN WEST AFRICAN FORESTS

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We examined the diversity of ectomycorrhizal fungi and ectomycorrhizas of *Caesalpinioideae, Euphorbiaceae* and *Dipterocarpaceae* specie trees growing in the tropical forests in West Africa. We collected 161 different sporocarps and 113 ectomycorrhizas under these tree species. The 3 most represented orders are Russulales (57 fungal species), Boletales (22 fungal species) and Agaricales (18 fungal species). Several fungi, especially in the genera *Russula* and *Lactarius*, were found to be undescribed species. For example, we discovered *Russula* sect. *Archaeineae* sp. nov and *Lactarius* sect. *Plinthogali* sp. nov fruiting under a grouping of ectomycorrhizal specie trees. The taxonomic position of these fungi was confirmed by the amplification and DNA sequencing of the ML5-ML6 region of the mitochondrial large subunit rDNA gene, using a database on basidiomycetes. We also identified the fungi from ectomycorrhizas by matching the ITS-RFLP patterns of the ectomycorrhizas with sporocarps, or by placing the unknown ectomycorrhizas in a phylogenetic tree constructed from a database on basidiomycetes. Our results support the hypothesis that sporocarp inventories only partly reflect the ectomycorrhizal species composition in west african forests.

20 mycelial cultures were isolated from sporocarps, ectomycorrhizas and sclerotia. Fungal inocula were produced on a mixture of vermiculite and peat moistened with a nutrient solution. These inocula were used for inoculation of seedlings growing in forest nurseries in West Africa. *Uapaca somon* showed the highest mycorrhizal dependency values, reaching a maximum of 85%, while the mycorrhizal dependency values of *Anthonotha macrophylla*, *Paramacrolobium coeruleum*, *Afzelia africana*, *Afzelia bella* and *Cryptosepalum tetraphyllum* were similar, reaching no more than 50%.