

Asatiani, M.D., Elisashvili, V., Wasser, S.P., Reznick, A.Z. & Nevo, E. 2007. Antioxidant and free-radical scavenging activity of submerged mycelium extracts from aphylloroid mushrooms. – *Mycologia Balcanica* 4: 45-50.

Abstract. Antioxidant properties were studied from ten submerged cultivated mycelium Basidiomycetes strains of aphylloroid mushrooms using the β -carotene bleaching method and ten strains using DPPH free-radical scavenging assay. Three different solvents: ethanol, water (culture liquid), and ethyl acetate were used for extraction. The yield of extracts from biomasses depended on the mushroom species and solvent used. Water extracts from *Stereum hirsutum* 524 and *Ganoderma lucidum* 545 showed high (74 % and 81 %) antioxidant activities (AA) at 2 mg/ml using the β -carotene bleaching method. When the ethanol extracts were tested, the highest AA were found in *Ganoderma lucidum* 545, *Stereum hirsutum* 524, and *Trametes versicolor* 1013 extracts (77 %, 68 %, and 72 %, respectively) at a concentration of 2 mg/ml. Water and ethanol extracts from *Ganoderma lucidum* showed the highest scavenging ability (70 % and 56 %, respectively) on 1, 1-diphenyl-2-picrylhydrazyl (DPPH) radicals at a minimal sample concentration of 0.5 mg/ml. The scavenging capacity of extracts varied from 1 to 85 % depending on the mushroom species, solvent used, and concentration. *Inonotus tamaricis* and *Trametes gibbosa*, exerted high scavenging abilities at low-effective concentrations.

Key words: antioxidant activity, aphylloroid mushrooms, free-radical scavenging, submerged mycelium, water and ethanol extracts