

Selezska, K., Brodsky, L. & Nevo, E. 2007. Adaptive growth rates of fungi from *Aspergillus niger* group from contrasting environments: Dead Sea and “Evolution Canyon” I (Israel) under different osmostress. – *Mycologia Balcanica* **4**: 51-60.

Abstract. Filamentous fungi from *Aspergillus niger* group were isolated from the hypersaline Dead Sea water and the temperate “Evolution Canyon” I, lower Nahal Oren, Mount Carmel. A comparison of growth rates of the strains collected from the Dead Sea and the north- and south-facing slopes of “Evolution Canyon” I, over a range of water activities, was provided. Media adjustments were made with different volumes of Dead Sea water. Strains from all habitats showed optimal growth rates at 5 % of Dead Sea water (a_w 0.983) and ceased growth at 65 % of Dead Sea water (0.785 a_w). However, significant interpopulation growth differences were detected (by the non-parametric Kolmogorov-Smirnov test) at different a_w . Under low salinities (< 15 %), “Evolution Canyon” I strains significantly differ from Dead Sea water strains in distributions of growth rates. Under high salinities (> 40 %), there is the same divergence of “Evolution Canyon” I strains vs. Dead Sea water strains, and some divergence between African and European slopes appears. African slope and European slope populations are significantly different in growth rate under 40 % of salinity and have a tendency to be different under 45 % and 50 % volumes of Dead Sea water. We conclude that *A. niger* group isolated from the Dead Sea water is more resistant, and the African slope population has a tendency to be more resistant to stress associated with low-water activity. We suppose that these patterns appear adaptive.

Key words: *Aspergillus niger* group, Dead Sea water, growth rate, water activity stress