-Terrestrial fungi tolerating the hypersaline water of Wadi El Natrun Lakes, Egypt

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Abstract:

Abstract: Chemical analysis revealed that water samples collected from Wadi El-Natrun Lakes were highly alkaline, of pH ranging from 8.4 –9.5 and of high levels of total soluble salts, chlorides, sodium and potassium. Water collected from El-Zugm Lake showed the highest levels of organic matter, sodium, calcium, magnesium and chlorides among the 8 lakes investigated. On the other hand, some parameters showed their peak in other lakes e.g. pH (9.4) and total soluble salts (87%) in Fasida. A total number of genera (16) and species (33) were recorded from water samples collected from all lakes during the seasons of study, with the widest spectrum of species being isolated on the control medium (14) and the lowest on 10% NaCl medium (3). Aspergillus, Acremonium followed by Penicillium were the most dominant genera possessing the highest proportions of propagules on all isolation media except on 10 % NaCl. On the other hand, only species of the genera Scopulariopsis and Acremonium were isolated on 10% NaCl medium. Aspergillus showed its count peak in Al-Beida Lake during winter 2007 on both acidic and alkaline media while in spring 2007 on control medium (from Khadra Lake) and on 40% sucrose (from El-Zugm Lake). From Aspergillus, A. terreus followed by A. flavus and A. niger were the most common on all the isolation media, but A. ochraceus was dominant on acidic media only. Other most common species, namely Penicillium chrysogenum and P. puberulum were encountered on all media but not on 10 % NaCl medium. Some species were isolated on one medium but not on the others: Scopulariopsis halophilica (on 10% NaCl), Emericella quadrilineata (on 40% sucrose), Staphylotrichum coccusporum (on medium adjusted at pH 4) and Acremonium hyalinulum (on alkaline media).

Keywords:

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