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Salinity Tolerance Capacity of *Chlorococcum* sp. Isolated from Wahawa Geothermal Springs in Sri Lanka

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The algae species inhabiting the geothermal springs must tolerate extreme temperature and saline conditions present in geothermal springs compared to their counterparts living under normal environmental conditions. This study investigated the salinity tolerance capacity of the green algal species *Chlorococcum*, isolated from Wahawa geothermal springs in Sri Lanka, with the intention of investigating further, the taxonomy, ecology and applications in extreme saline conditions. Isolated *Chlorococcum* sp. was exposed to a salinity series prepared using Bold Basal Medium (BBM) in conical flasks with seven different NaCl concentrations (25, 1000, 2000, 5000, 10000, 20000, 40000 ppm), at average temperature 45±3 ˚C under 12 h/12 h light/dark with average natural day light intensity 1311 µmol m^{-2} s^{-1} for seven weeks. Growth of *Chlorococcum* sp. was measured spectrophotometrically, measuring the optical density at 750 nm every week. An exponential growth pattern of *Chlorococcum* sp. was observed in all salinity levels during the 7-week period. The highest growth rate 34 cells mL^{-1} day^{-1} was observed under 25 and 5000 ppm NaCl concentrations and the lowest rate (7 $cells^{-1}mL^{-1}day^{-1}$) with the highest salinity (40000 ppm) by indicating that tested *Chlorococcum sp.* can survive under broad salinity range (25–40000 ppm) although the growth rate is significantly different (P=0.0000). *Chlorococcum* spp. occur in both terrestrial and aquatic habitats and some *Chlorococcum* spp. are known to be halophytic. Thus, the isolated *Chlorococcum* sp. from Wahawa geothermal springs might be a morphotype of these halophytic *Chlorococcum* spp. The broad salinity tolerance of the tested *Chlorococcum* sp. warrants further investigations towards ecological and economical applications.

Key words: *Chlorococcum sp., Geothermal springs, Salinity, Tolerance*

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