The crude oil biodegradation by *Fisherella* (*Fischerella* sp. ISC67) and *Nostoc* (*Nostoc* sp. ISC101) Cyanobacteria

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Abstract
The purpose of this study was to investigate the growth and potential of crude oil biodegradation by *Fischerella* and *Nostoc*. In this study (2015), the growth rate of cyanobacterial species such as *Fischerella* sp. ISC107 and *Nostoc* sp. ISC101 were determined using chlorophyll-a content measurement at 663nm under different treatments of crude oil (control, 0.1, 0.2, 0.4, 0.8 and 1.6%). The crude oil concentration was analyzed by gas chromatography (GC-FID) after 21 days, and also the biodegradation rate was determined. Results showed that by increasing the concentration of crude oil, the amount of chlorophyll-a was significantly decreased. So, the growth rate (based on chlorophyll-a) of these cyanobacteria were almost nearly equal or lower than the control sample in the presence of crude oil. The maximum and minimum percentages of crude oil biodegradation, in the treatments of 0.1 and 1.6% were 88.27% and 44.72% (*Fischerella*) and 91% and 47.46% (*Nostoc*), respectively after 21 days. The rate of biodegradation in all treatments was significantly ($P<0.05$) higher than control. According to results of this study, *Fischerella* ISC107 and *Nostoc* ISC 101 were shown great potential for crude oil biodegradation and can be used as valuable strains for biodegrading, elimination or the reduction of oil pollution in contaminated areas.

Keywords: Crude oil; Biodegradation; *Fischerella*; *Nostoc*; Chlorophyll-a.