

## عنوان مقاله:

The Impact of Combined Alkalinity and Time Pretreatments on Light-Harvesting System in Terrestrial Cyanobacterium  
(Fischerella sp. FS ۱۸ (Oscillatorials, Cyanophyta

## محل انتشار:

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## خلاصه مقاله:

Possibility of change in the phycobilisome status, photosynthetic pigments, photosynthetic ratios, and photosynthetic parameters of soil cyanobacteria Fischerella sp. FS ۱۸ investigated. Neutral and extreme alkaline pH (۷, ۹), and short time incubation including ۲۰, ۴۰, and ۶۰ minutes treatments. After purification, cyanobacteria were subjected to extreme alkaline treatment for one hour at ۲۰, ۴۰, and ۶۰ minutes intervals. Colorimetric assays of phycocyanin, allophycocyanin, phycoerythrin, chlorophyll) and a comparison of the combined effect of time and alkalinity on photosynthetic ratio performed. Indeed, the photosynthesis-light curves compared with direct measurements. The results showed that the combined treatment of time and alkalinity after ۲۰ minutes of inoculation significantly increased the performance of the photosystem and stability of the phycobilins. While, under the ۴۰ min and both neutral and alkaline treatments, the yield of photosystem II, increased the production of the photosystem I, and significantly the linear fraction of the photosynthesis-light curve. Although, the needed energy to achieve maximum photosynthesis was reduced. Further, the maximum photosynthesis was completely different at ۴۰ min pretreatment and without pretreatment. Furthermore, the results show no specific regularity and trend at ۲۰ and ۶۰ minutes of treatment. Thus, the production of light collecting-antennas is influenced by both time and alkalinity treatments. In consequence, ۶۰ minutes or fewer treatment times, cause a significant change in the structure and performance of the photosynthetic apparatus. While alkaline treatments at a short time significantly save energy and enhance photosynthesis

## کلمات کلیدی:

Pretreatment, time, Cyanobacteria, Alkalinity, Fischerella sp. FS ۱۸

## لینک ثابت مقاله در پایگاه سیویلیکا:

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