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**Document Title** : Studies on soil cyanobacteria from Umm-Al-Salam in Western Region, Saudi Arabia  
دراسات على سيانو بكتريا التربة من منطقة أم السلم بالمنطقة الغربية من المملكة العربية السعودية

**Document Language** : Arabic

**Abstract** : This investigation embraces two main groups of studies; namely physico-chemical characteristics and Cyanobacteria population. This study was performed three times during the period from November 1992 to October 1993 (11/1992, 4/1993 and 10/1993). These variations were followed in soil samples collected from soil surface of three trees (Phoenix dactylifera L., Melia azadirachta L., Parkinsonia aculeata L.) and grass of Imperata cylindrica L. These plants cultivated in Umm-al-Salam in Western Region, Saudi Arabia. The results could be summarized as follows: Mean value of soil moisture ranged between 10.4% (Parkinsonia aculeata) and 14.36% (Imperata cylindrica). Mean pH values of sample~ recorded to be always on the alkaline side (8.11-8.25). Mean values of biomass of soil samples showed generally somewhat irregular variation during the period of study. The minimum biomass was 3.26 gm/m<sup>2</sup> (Phoenix dactylifera) , however, the maximum biomass was 8.0 gm/m<sup>2</sup> (Melia azadirachta). The results also showed that little change in mean of values of organic carbon (ranged between 6.73 gm/m<sup>2</sup> in Imperata cylindrica and 7.71 gm/m<sup>2</sup> in Melia azadirachta) during investigation period of study. Mean values of total nitrogen of soil samples ranged between 1.65 gm/m<sup>2</sup> (Parkinsonia aculeata) and 3.09 gm/m<sup>2</sup> (Melia azadirachta). Mean values of soluble salts showed irregular trend. They ranged between 51.88 gm/m<sup>2</sup> (Melia azadirachta) and 292.92 gm/m<sup>2</sup> (Phoenix dactylifera). Twenty three species belonging to 7 genera of Cyanobacteria were identified from soil crust samples of the four plants during investigation period of study. There were no specific cyanobacterial flora for any of the four types of substrates with the most frequent species being: Plectonema nos~ocorum, Nostoc entophytum, N. minutum, N. calcicola, N. muscorum and Lyngbya gracilis. Moreover, Phonnidiunl molle f. tenuior isolated from all the four soil samples except the soil sample of Melia azadirachta L., several species were isolated only from one or two substrate and not from the others. For example: a -Nostoc punctifonne, Nostoc carneum, Anabaena naviculoides isolated from soil samples of Phoenix dactylifera and Parkinsonia acul~ata.. However, Anabaena subtropica isolated from soil sample of Melia azadirachta and Parkinsonia aculeata. b- CaJothrix braunii, Nostoc sphaericum, Anabaena °IYzae, A. variabilis (1), A. variabilis (2), Oscillatoria rubescens and O. paucigranata belonging to substrate of Phoenix dactylifera only. Calothrix con tarenii isolated from soil sampl~ of Melia azadirachta only. c- Nostoc piscinaJe, N. passerianum , N. collJm un e, N. eleganse and Lyngbya ~eIlJgineo- coerulea belonging to the soil sample of Parkinsonia aculeata only.

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