

Phytoremediation Potenciality of 'Polypogon monspeliensis L. in Detoxification of Petroleum-Contaminated Soils

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Abstract : In a greenhouse study, decontamination capacity of the species *Polypogon monspeliensis*, for detoxification of petroleum-polluted soils caused by sewage and waste materials of Tehran Petroleum Refinery. For this purpose, the amount of total oil and grease before and 45 days after transplanting one-month-old seedlings in the soils of five different treatments in which pollution-free agricultural soil and contaminated soil were mixed together with the weight ratio of respectively 1 to 9 (% 10), 2 to 8 (%20), 3 to 7 (%30) , 4 to 6 (%40), and 5 to 5 (%50) were evaluated and compared with the amounts obtained from control treatment without vegetation, but with the same concentration of pollution. Findings demonstrated that the maximum reduction in the petroleum rate ,as much as 84.85 percent, is related to the treatment 10% containing the plant. Increasing the shoot height in treatments 10% and 20% as well as the root dry and fresh weight in treatments 10% , 20% , and 30% shows that probably activity of more rhizosphere microorganisms of the plant in these treatments has led to the improvement in growth of plant organs comparing to the treatments without pollution.

Keywords : phytoremediation, total oil and grease, rhizosphere, microorganisms, petroleum-contaminated soil

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