

Investigating the Effect of Industrial Wastewater Application on the Concentration of Nitrate and Phosphate in the Soil of the Land Space of Chaharmahal and Bakhtiari Sefid Dasht Steel Company

Authors : Seyed Alireza Farrokhzad, Seyed Amin Alavi, Ebrahim Panahpour

Abstract : The use of industrial wastewater affects the properties of soil, including its chemical properties. This research was conducted randomly in order to investigate the effect of industrial wastewater application on the concentration of nitrate and phosphate in loamy soil in the land space of Chaharmahal and Bakhtiari Sefid Dasht Steel Company. Industrial wastewater was added in ten irrigation periods in the three months of summer 2022 and was used in a part of the land space of the factory. After finishing the irrigation process with wastewater, the soil nitrate and phosphate values were measured at the depths of 0-25, 25-50 and 50-100 cm. The results showed that adding sewage to the soil increased nitrate and phosphate. The increase of these ions in the soil became loamy. Also, the results showed that the amount of phosphate in the soil decreases with increasing depth, while the amount of nitrate in the soil increases with increasing depth, which is due to the high mobility of nitrate along the soil profile. Also, with the increase in the level of use of wastewater, the amount of nitrate accumulation in the lower layers of the soil increased.

Keywords : industrial wastewater, soil chemical properties, loamy texture, land space

Conference Title : ICMMIS 2024 : International Conference on Metal Material, Iron and Steel

Conference Location : Maldives, Maldives

Conference Dates : January 18-19, 2024