

Standards for Assessment of Soil Contaminated by Heavy Metals, Saudi Arabia

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Heavy metals pollution (Pb, Cd, Cu, Zn, Hg, etc..) have many impacts on the environment and living creatures. Industrial activities, mining and transportation make this problem worse - making it one of the major environment problems all over the world. During the mid of last century more studies were initiated to evaluate the pollution of soil with heavy metals, specially on their concentrations, forms, mobility and the impact value on the environment. Some of these studies concentrated on the guidelines and critical values that lead to questions like: is the soil contaminated? Others are related to the total value, forms, mobility, or ratio of these elements to reference elements existent in nature. Due to soil characteristics that affect the behavior of heavy metals such as the soil pH, organic matter, soil texture, type of elements etc... We found many differing guidelines – depending on the country and/or region. For instance, Dutch, Scottish, Chinese guidelines. Others take into consideration the type of activity above the soil, such as commercial, public parks, industrial areas and so on. Lately, some studies figured out that some soils in Saudi Arabia were highly contaminated, such as some soils in Riyadh city, or soils around Mah'd Aldhahab gold mine etc..., but researchers faced the problem of finding local guidelines suitable for Saudi soils to evaluate the ratio of impact of their pollution and make the right judgment. So this paper will focus on the need of establishing guidelines for soil contamination with heavy metals based on our local environment taking into consideration the special characteristics of Saudi soils.