

ABSTRACT

This project report reviews a land remediation technique and its potential to remove contaminants on the soil. The remediation technique here is phytoremediation and the specific contaminant to be remediated from the soil is lead. It also presents the effects of lead on the soil highlighting how it compromises soil strength in general thus justifying the need for remediation. The measurements and data collected here were consolidated from past experiments already done. From the data collected, it was observed that heavy metal ion concentration on soil has an effect on the compaction, penetration and unconfined strength of soil and that they result in a compromised soil structure and thus construction should not be done without remediation of the soil to avoid structure failure. Also, it was observed from the phytoremediation experiment that sunflower was an effective hyper-accumulator with regards to the data collected and observations made; the translocation factor and the lead concentration in the shoots and roots. A higher concentration of heavy metals was found in the shoots than in the roots of the sunflower plants and the average translocation factors ranged between 1.03-3.88. This proved the potential for phytoremediation using sunflower showing that it is efficient. It was also found that the hyper-accumulators used had a higher translocation factor in more concentrated solutions thus the land remediation technique is more efficient in heavily contaminated sites. From all these observations it can be said that lead contamination on soil is a problem not only in our country but worldwide and should be addressed to avoid further negative effects.