



Assessment of marine dredged materials taken from Turkey's ports/harbors in landscaping

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ABSTRACT

This paper presents the technical usability of marine dredged material (DM) as a manufactured topsoil (MT) in the municipality's landscaping works. In the first part of this study, the physico-chemical and toxicological properties and leaching potentials of DMs taken from two sampling points (Istanbul Ambarlı Port and Mersin Erdemli Fishery Harbor) from Marmara and Mediterranean Sea of Turkey were determined and compared pursuant to the National Legislation. In the second part, various improvement studies such as screening, desalination (washing), dewatering, organic amelioration via peat and sheep manure and pH adjustment were carried out on DM samples in order to transform DMs into an alternative natural soil in compliance with the British Standard BS 3882:2015. A total of five different MT mixtures were prepared; then, soil quality and soil nutrient characteristics were examined. Finally, grass seeds were planted into topsoil mixtures, and plant growth performances were followed for 3 months. The results of this study showed that improved DMs can be beneficially used as an alternative MT in order to cultivate grass in municipality's landscaping applications.

Keywords: Beneficial use; Desalination; Dredged material; Organic amelioration; pH adjustment; Topsoil

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