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ABSTRACT

The screenings are below a certain size fine river bed materials and not useful for concrete production. They do not have a high economic value. For raising the reuse potential of the screenings, this study adds three organic materials (miscellaneous compost, food waste and cattle manure) individually into the screenings for soil physical and chemical properties. Then all the mixtures are proceeded to keep moisture for 8 months and are taken monthly measurements of soil reaction (pH value), soil electrical conductivity, soil available phosphorus and soil total nitrogen. Results suggest that pH value and electrical conductivity both have increased with time and exchangeable base cations can be increased gradually after adding the organic materials into the screenings. The total nitrogen also show increase trends with time. Our study suggests when considering using the screenings for the farms or green landscaping, these three organic materials could be added to carry out the improvement and increase the nutrient content for the plants.

Key words: Screenings, Organic materials, Soil improvement

一、前言

工商業的快速發展，提升了人類的生活品質，相對地也產生了許多的廢棄物，諸如爐渣、污泥、尾砂等，為了能增加這些廢棄物之利用價值，過去有學者將其應用在土壤改良(Lindsay et al., 1998；Wong et al., 2001；黃俊銘、萬鑫森，1987；黃國禎等，1991；張滌云等，2007)、綠美化用地規劃(廖明聰，2005)和改善農產品產量(Vlamiš et al., 1985；Bidwell et al., 1987)等，以期解決這些廢棄物的最終處置困境，創造優質的再生資源。

尾砂為砂石場砂石經過破碎以及分離的過程，產生各種料號的有用級配，最後所剩餘的細顆粒土壤，由於其不適合作為營建資材之級配料，因此常被倒入河川中或堆積在砂石場附近。尾砂之透水性良好，在經過太陽曝曬後，常會形成風砂、粉塵，造成環境污染和景觀破壞(李明禹，2002)。國內在大量砂石需求情形下，相對地尾砂產量急速增加，因此為了能增加尾砂之利用價值，過去有