

Physical Characteristics of Locally Composts Produced in Saudi Arabia and the Need for Regulations

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Abstract : Composting is the suitable way of recycling organic waste for agricultural application and environment protection. In Saudi Arabia, several composting facilities are available and producing high quantity of composts. The aim of this study is to evaluate the physical characteristics of composts manufactured in Saudi Arabia and acquire a comprehensive image of its quality through the comparative with international standards of compost quality such as CCQC and PAS-100. In the present study different locally produced compost were identified and most of the producing factories were visited during the manufacturing of composts. Representative samples of different compost production stage were collected and Physical characteristics were determined, which included moisture content, bulk density, percentage of sand and the size of distribution of the compost particles. Results showed wide variations in all parameters investigated. Results of the study indicated generally that there is a wide variation in the physical characteristics of the types of compost under study. The initial moisture contents in composts were generally low, it was less than 60% in most samples and not sufficient for microbial activities for biodegradation in 96% of the 96% of the types of compost and this will impede the decomposition of organic materials. The initial bulk density values ranged from 117 gL⁻¹ to 1110.0 gL⁻¹, while the final apparent bulk density ranged from 340.0 gL⁻¹ to 1000gL⁻¹ and about 45.4 % did not meet the ideal bulk density value. Sand percents in composts were between 3.3 % and 12.5%. This study has confirmed the need for a standard specification for compost manufactured in Saudi Arabia for agricultural use based on international standards for compost and soil characteristics and climatic conditions in Saudi Arabia.

Keywords : compost, maturity, Saudi Arabia, organic material

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