



Evaluation of Compost Maturity, Hydrophysical and Physicochemical Properties: Indicators for Use as a Component of Growing Media

Submitted by Emmanuel Lemoine on Thu, 02/12/2015 - 13:05

Titre	Evaluation of Compost Maturity, Hydrophysical and Physicochemical Properties: Indicators for Use as a Component of Growing Media
Type de publication	Article de revue
Auteur	Rigane, Manel Kammoun [1], Michel, Jean-Charles [2], Medhioub, Khaled [3], Morel, Philippe [4]
Editeur	Taylor & Francis
Type	Article scientifique dans une revue à comité de lecture
Année	2011
Langue	Anglais
Date	2011/09/01
Numéro	4
Pagination	226 - 234
Volume	19
Titre de la revue	Compost Science & Utilization
ISSN	1065-657X

Résumé en anglais

The cocomposting of agricultural waste is a new management priority in Tunisia. In this study, four composts were evaluated by comparing the changes in measured hydrophysical and physicochemical properties and phytotoxicity. The organic wastes used were almond shell (AS), sesame bark (SB), olive husk (OH), and green and wood wastes (GW and WW, respectively). Composts CI and CII were composed of AS/SB and OH/SB, respectively, at a ratio of 75/25 (wet weight basis). CIII consisted of OH, SB and CAS (coarsely-ground almond shell used as a bulking agent) at a ratio of 55/25/20. Finally, CIV was composed of 25%SB+9%CAS+18%GW+48%WW. The composts studied were characterized by basic pH and an electric conductivity (EC) value ranging from 1.6 to 2.4 mS/cm. The organic matter contents (OM) and C/N ratios of composts ranged from 20 to 46% and from 10 to 21%, respectively. Based on hydrophysical analyses, composts CI, CIII and CIV, containing AS, were shown to have a porosity and a water content of 10-26% and 10-20%, respectively. The phytotoxicity of composts was studied on the basis of cress seed germination. Results revealed that differences in properties are mainly related to the nature of composted waste and that some of these composts are compatible for use as constituents in growing media for horticultural soilless cultures.

URL de la notice	http://okina.univ-angers.fr/publications/ua7777 [5]
DOI	10.1080/1065657X.2011.10737006 [6]
Lien vers le document	http://dx.doi.org/10.1080/1065657X.2011.10737006 [6]

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