Formulation and quality assessment of compost prepared with different compositions of Palmyrah resources

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A study was carried out to find the best formulation for compost by utilizing palmyrah resources and to study the effect of such compost on crop yield. This study was done at Palmyrah Research Institute. The experiment was designed in a Complete Randomized Design with seven treatments and three replicates. Palmyrah leaf, Palmyrah coir dust, paddy straw, cow dung and commercial compost were used as raw materials for the study. Palmyrah leaf (L) and Palmyrah coir dust(C) were mixed in different ratio while maintaining other raw materials in same percentage each for all treatments. T_1(L:C 0:60), T_2(L:C 10:50), T_3(L:C 20:40), T_4(L:C 30:30), T_5(L:C 40:20) , T_6(L:C 50:10) and T_7(L:C 60:0). Cow dung, paddy straw and commercial compost were added in 30%, 5% and 5% respectively. A pot experiment was done under green house with the test crop of Okra (*Abelmochus esculentus*). Four months after formulation different types of compost were applied to test crop and quality of compost was tested according to SLS 1246: 2003. Results were analyzed in SAS software and the mean separation was done by LSD at p=0.05. All seven composts have met minimum requirement of carbon and nitrogen content.T_7 exceeded the limit of C: N ratio and also did not meet the minimum requirement of phosphorous content. Other six treatments obey to SLS in C: N ratio (10 to 25).T_3 and T_5 did not meet the minimum requirement of phosphorous and magnesium (0.5%), respectively. T_1 also had lower phosphorous content than the minimum limit of SLS (0.5%). T_4 and T_6 did not meet the requirement of magnesium content. Results of the pot experiment revealed that treatment T_2 has given higher crop yield. According to the crop response nutrient composition T_2 was identified as the best compost formulation.

Keywords: Coir dust, Compost**,** Palmyrah.