

## Production of quality compost using locally available waste in combination with *Spirulina subsalsa*

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**Background:** Due to the over usage of chemical fertilizers there is a high risk of environmental pollution. Therefore, it is necessary to find an alternative source for fertilizers.

**Objectives:** The study was aimed at producing a good quality compost using different combinations of locally available resources.

**Methods:** Six treatments (T1- Kitchen waste (KW)+ *Gliricidia* leaf (GL) + Yard waste (YW), T2 – KW + GL + YW + *Spirulina* biomass (SB), T3 - GL+ Cow dung (CD) + YW, T4 - GL + CD + YW + SB, T5- YW + CD, T6 - YW + CD + SB) were designed in completely randomized design and materials were composted in plastic bin with initial C:N ratio of 35:1. After 4<sup>th</sup>, 6<sup>th</sup> and 8<sup>th</sup> weeks, physical properties (sand content, decomposition rate in terms of particle size and moisture content) and chemical properties (pH, C, N, and C: N ratio, K, P and Ca) were measured.

**Results:** Compost produced in all treatments complied with SLS standards in terms of moisture content, pH, C, N, C/N ratio, K and Ca except P. Compost of T5 and T6 did not comply with the SLS standard of less than 10% sand percentage and decomposition rate of more than 80%. However, other four treatments of T1, T2, T3 and T4 complied with the SLS standards for sand % and decomposition rate. The results of nitrogen and decomposition rate in T1 and T2 compost revealed that use of *Spirulina* does help to increase the compost quality compared to without *Spirulina* application.

**Conclusion:** As the compost produced in T1, T2, T3 and T4 complied with SLS standards in all parameters except P, these treatments could be recommended to produce compost with suitable P supplements.

**Keywords:** Compost, Yard waste, *Gliricidia*, Kitchen waste, Cow dung

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