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A comparative study of physical, chemical and biological (*Salmonella* and Faecal coliform) properties of compost derived from municipal solid waste in Sri Lanka

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Many local government authorities are now engaged in site composing programmes. The marketability of the compost has however become a problem since there is wide variation in the quality of compost originating from different places. The main aim of this research was to identify variations of properties of compost derived from site composting facilities using solid waste in LGAs Sri Lanka. Samples were obtained from bulk heaps of compost from 30 site composting LGAs. Moisture content, organic matter content, N content, EC, pH, K, P, Ca, Mg, Cu, Fe, Mn, Zn, Hg, Cd, Pb, Cr, Ni, Hg, particle distribution, sand content, Faecal coliform and *Salmonella* were measured in these and compared against the standards given by the Sri Lankan standards institute for compost. Heavy metal concentration of all the samples were very low and far below the standards. Elemental composition of the compost shows that the amount of certain nutrients like P, K, Ca, and Mg contents were comparatively low.

Total organic carbon percentage ranged from 7.21 % to 22 % whereas the standard value is a minimum of 20%. While the pH values of 28 composts that derived from solid waste was within SLS standards from 6.8 to 8.5 the value of two samples were above the accepted range. Nitrogen content ranged from 0.53% to 2.44% while the standard is a minimum of 1%. Phosphorus content ranged from 0.08% to 1.44% while standard is a minimum of 0.5%, Potassium content from 0.14% to 3.76 % by mass while standard is minimum of 1%, Magnesium content from 0.05% to 0.65% by mass while standard is a minimum of 0.5% and Calcium content from 0.32% to 10.96 % by mass while standard is minimum of 0.7%. *Salmonella* was absent in all thirty composts samples, however, compost from four sites contained levels of faecal coliform (as high as 1100 count per g). Only three compost samples had faecal coliform counts within the SLS standard which states the compost should be free of coliform. All thirty composts contained levels of sand which exceeded the SLS standard of a maximum of 10%.

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