

**QUALITY ASSESSMENT OF MUNICIPAL SOLID WASTE COMPOST AND
COMMERCIALY AVAILABLE COMPOST IN SRI LANKA**

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Employing composting for Municipal Solid Waste (MSW) helps divert organic waste from landfills, providing a cost-effective means of producing agricultural materials. This research aimed to assess the quality of compost in MSW and commercially available compost. MSW compost from Horana, Mathugama, Mirigama, Seethawaka, Kaduwela, and Karadiyana were obtained, and five commercially available compost products (C1-C5) were purchased. Quality assessment was carried out according to the Sri Lanka Standard Institution (SLSI) guidelines. As physical characteristics, MSW and commercially available compost reported a pH range between 4.24 ± 0.25 and 7.68 ± 0.25 , electrical conductivity (EC) range between 1.85 ± 0.15 and 7.55 ± 0.15 S/m, sand content of $22.30 \pm 0.06\%$ to $33.51 \pm 0.10\%$, moisture content of $15.84 \pm 0.55\%$ to $55.52 \pm 0.27\%$, respectively and particle size range of 0.33-24.73%. Both MSW and commercially available compost showed a nitrogen content range of 0.21-2.35%, organic carbon content of 12.53%-50.62%, C:N ratio of 11.29-179.77 and total phosphate content of 0.06%-1.84%. Nutrient content varied as $\text{Ca} > \text{K} > \text{Mg}$ in all compost samples. None of the samples (Cd: 0.01-0.09 mg/kg, Pb: 0.24-0.84 mg/kg, and Cr: 0.42-4.17 mg/kg) exceeded the SLSI standard values for Cd, Pb and Cr. Except for Horana, Seethawaka, and C2 samples, others were contaminated with faecal Coliform colonies (3.6-43 CFU/100 mL). *Salmonella* sp. was detected only from the Seethawaka sample. Results revealed that, municipal compost is more compliant with SLSI standards than the commercially available compost. Hence, Municipal solid waste compost is better for agricultural purposes. Because of the strict waste management and quality control that went into making it, this high-quality compost has several advantages for plant development, soil health, and environmental sustainability.

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