

## Composting as an alternative for the disposal of *Loxodonta africana* manure

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The disposal of excrement from *Loxodonta africana* creates a lot of concern to the technicians of the Dr. Juan A. Rivero Zoo of Puerto Rico. The objective of this study was to evaluate composting as an alternative to dispose *L. africana* manure (M). The treatment evaluated consisted of M with yard trimmings (YT) as a bulking agent (BA). The materials were blended in a 3:1 ratio (M:YT) and placed in composting bins of identical dimensions (3 ft<sup>3</sup>). Moisture level was maintained at approximately 60% throughout the composting phases. Temperature was recorded daily to determine when the first and second heat cycles were reached. Composting characteristics such as: pH, carbon to nitrogen (C:N) ratio, organic (OM) and inorganic matter (IM), and nitrogen (N) concentration were measured at 0 d, at the peak of the first and second heat cycles, and 0, 20, 40 and 60 d of maturation. Data was analyzed according to a completely randomized design using the ANOVA procedure of SAS. The pH decreased ( $P < 0.05$ ) until 20 d of maturation (8.45 to 7.74%). As expected, OM (79.15 to 65.03%), C (43.97 to 36.13%), and C:N (28.39 to 17.53) decreased ( $P < 0.05$ ) while IM (20.85 to 34.97%) increased ( $P < 0.05$ ) as the composting process advanced to 20 d of maturation. Results showed thermophillic temperatures continuously for 22 days reaching a maximum of 137.6°F. These results suggest that composting can be an alternative to reduce this type of organic residue.