

## CONVERSION OF ORGANIC PART OF MUNICIPAL SOLID WASTE IN TO COMPOST AS AN ORGANIC FERTILIZER FOR PADDY CULTIVATION IN DRY ZONE

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Municipal local authorities in Sri Lanka face immense problems in managing municipal solid wastes. Therefore, it is necessary to formulate a national policy to upgrade and maintain deteriorated cropping land by making use of compost produced from bio degradable municipal solid wastes. The open site direct dumping is the most commonly adopted method by the local authorities. Therefore, introducing methods like composting which has been used widely to treat municipal solid waste is a viable alternative. Composting of municipal solid waste using aerated windrow pile is a low cost and less labour required method. Colombo municipal solid wastes contain 32% of biodegradable material. It is a good source for compost.

Rice is the main food crop grown in Sri Lanka. Final yield of rice mainly depend on supply of nutrients through the organic and inorganic fertilizers for the plant growth,. In this study, a field experiment was conducted to identify the effect of market waste compost on growth and yield of rice in the dry zone of Sri Lanka. Compost which was prepared by market waste and inorganic fertilizer were used for the experiment with BG 358 rice variety arranged in a Randomized Complete Block Design (RCBD) with four replicates in two drainage classes. This compost was evaluated in comparison with the Department of Agriculture recommendation and two other treatments of individual application of organic and inorganic fertilizers. Growth parameters were evaluated at the maximum tillering stage and primordial initiation stage. Yield parameters were collected at 80% maturity stage and data were analyzed using statistical analysis software (SAS).

The treatment showed significant difference for plant height at the maximum tillering stage and primordial initiation stage and also for some yield parameters except thousand grain weight. Higher filled grain percentage and thousand grain weight were recorded by 100% compost treatment. However the statistical analysis revealed that the municipal solid waste compost was more suitable for poorly drained paddy field than well drain paddy field to obtain good harmless and chemical free yield.

*Key words:* Municipal solid waste, Windrow pile, Compost, Well drain, Poor drain