

**The effect of three different organic wastes on the performance of
Napier-Clone 13 (*Pennisetum purpureum*)**

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The effect of poultry litter (PL), goat manure (GM) and spent tea leaves (STL) on bio-mass production and quality of *P. purpureum*-Clone 13 were investigated in a simulated field experiment (annual rain fall ± 2352 mm with fairly constant temperature of 28°C). Galvanised containers (0.28m^2) filled with normal soil (150 kg) were amended either with PL, GM or STL at a rate of 50 kg N ha^{-1} . The amounts added/container were 34, 104 and 79 g for PL, GM and STL respectively. Two stem cuttings of Clone 13 were planted in each container two weeks after the soil amendment. Containers were placed in outdoor garden arranged in a randomized block design (3 x 3) and shaded with a green net to simulate near-the-canopy environment (35% reduction of normal light -665×10^2 Lux). Approximately four months after planting, an initial harvest was done at 10 cm height above ground level. Subsequent 3 harvests were done at 4 week intervals. Same quantity of PL, GM and STL was applied after each harvest.

Plants treated either with PL or STL out yielded ($P < 0.05$) the plants treated with GM in respect of fresh and dry matter at each harvest. The mean cumulative dry matter yields were 138, 134 and 53 g plant^{-1} , respectively for plants treated with PL, STL and GM. In contrast, plants treated with GM had highest crude protein (CP) content in herbage (8.98%) followed by plants treated with STL (8.65%) and PL (8.13%) confirming that there was a dilution effect of nitrogen (N) due to increase in bio-mass yield. The mean cumulative CP yield was highest in plants treated with STL (12 g plant^{-1}) followed by plants treated with PL ($11.24\text{ g plant}^{-1}$). Plants grown in GM had lowest ($P < 0.05$) cumulative CP yield of 5 g plant^{-1} . Although not significant, soil ash contents were rather high for all treatments while soil with STL had slightly higher N content than other two treatments. This may have affected positively on the growth of grass.

The results suggest that, the performance of clone 13 near the canopies could be easily boosted by adding poultry litter or spent tea leaves in order to enhance the use of organic waste to protect the environment. However, the effect of goat manure on the performance of Clone 13 should be further investigated.

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