

Evaluating the Performance of Organic, Inorganic and Liquid Sheep Manure on Growth, Yield and Nutritive Value of Hybrid Napier CO-3

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Abstract : Less availability of high quality green forages leads to low productivity of national dairy herd of Sri Lanka. Growing grass and fodder to suit the production system is an efficient and economical solution for this problem. CO-3 is placed in a higher category, especially on tillering capacity, green forage yield, regeneration capacity, leaf to stem ratio, high crude protein content, resistance to pests and diseases and free from adverse factors along with other fodder varieties grown within the country. An experiment was designed to determine the effect of organic sheep manure, inorganic fertilizers and liquid sheep manure on growth, yield and nutritive value of CO-3. The study was consisted with three treatments; sheep manure (T1), recommended inorganic fertilizers (T2) and liquid sheep manure (T3) which was prepared using bucket fermentation method and each treatment was consisted with three replicates and those were assigned randomly. First harvest was obtained after 40 days of plant establishment and number of leaves (NL), leaf area (LA), tillering capacity (TC), fresh weight (FW) and dry weight (DW) were recorded and second harvest was obtained after 30 days of first harvest and same set of data were recorded. SPSS 16 software was used for data analysis. For proximate analysis AOAC, 2000 standard methods were used. Results revealed that the plants treated with T1 recorded highest NL, LA, TC, FW and DW and were statistically significant at first and second harvest of CO-3 ($p < 0.05$) and it was found that T1 was statistically significant from T2 and T3. Although T3 was recorded higher than the T2 in almost all growth parameters; it was not statistically significant ($p > 0.05$). In addition, the crude protein content was recorded highest in T1 with the value of 18.33 ± 1.61 and was lowest in T2 with the value of 10.82 ± 1.14 and was statistically significant ($p < 0.05$). Apart from this, other proximate composition crude fiber, crude fat, ash, moisture content and dry matter were not statistically significant between treatments ($p > 0.05$). In accordance with the results, it was found that the organic fertilizer is the best fertilizer for CO-3 in terms of growth parameters and crude protein content.

Keywords : fertilizer, growth parameters, Hybrid Napier CO-3, proximate composition

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