COMPARISON OF GROWTH PERFORMANCE, YIELD PARAMETERS AND NUTRITIONAL COMPOSITION OF TWO HYBRID NAPIER (PAKCHONG-1 AND CO-3) CULTIVARS PROPAGATED AT BORALANDA FARM

A dissertation submitted to the

Faculty of Animal Science and Export Agriculture

Uva Wellassa University

in partial fulfillment of the requirement of

the degree of

Bachelor of Animal Science

by

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2020/2021

ABSTRACT

The objective of the current study was to determine the best forage cultivar of the two Hybrid Napier (Pakchong-1 and CO-3) cultivars that are well-suited to the prevailing agro-climatic conditions of the Boralanda Farm, Welimada, Sri Lanka based on the growth performance, yield parameters and nutritional composition. The experimental design was a randomized complete block design (RCBD) having 6 blocks, 2 treatment plots in each block and 10 replicates in each plot. After filed preparation, blocks were arranged according to the slope of the land. A soil analysis was conducted to determine the soil quality gradient across the blocks and basal fertilizer application was conducted after the land preparation. Two node cuttings of two cultivars were planted following standard recommendations. All the other agronomic practices following planting were kept constant across treatments. The number of leaves per plant, plant height and stem diameter were recorded weekly as growth parameters and plants were harvested 45 days after planting to record the fresh matter yield, plant height and leaves per plant. The results revealed that the cultivar Pakchong-1showed the highest growth performance having a higher number of leaves (53 Vs. 44), higher plant height (105 cm Vs. 90 cm) and larger stem diameter (21 cm Vs. 18 cm) compared to CO-3 ($p<0.05$) at 45 days after planting. As a result of the higher number of leaves and plant height, Pakchong-1 showed significantly higher fresh matter yield (2.742 kg/m^2) than CO-3. Although dry matter and ash contents were not different among the two cultivars, Pakchong-1 contained higher contents of crude fat (28.6% vs. 15.7% DM basis) and crude protein (20.5% Vs. 16.4% DM basis) ($p<0.05$). In conclusion, Pakchong-1 could be considered as the most suitable forage type among two cultivars in terms of growth characteristics, forage yield and nutritional composition to be used for ruminant feeding at Boralanda Farm.