EFFECTS OF PLANT SPACING ON PRODUCTIVITY AND NUTRIENT COMPOSITION OF HYBRID NAPIER GRASS-CO3 (*Pennisetum perpureum* x *Pennisetum americarnum*) IN THE EUSL LIVESTOCK FARM

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ABSTRACT

Feeding standards of ruminant livestock could be significantly enhanced through the cultivation of improved quality forages which are suitable for different agroclimatic conditions of the country. Hybrid Napier cultivars CO3 is the most popular among ruminant rearing farmers. Hence, an experiment was carried out to assess the growth parameters, herbage yield and chemical composition of hybrid Napier CO3 (*Pennisetum perpureum* X *Pennisetum americarnum*) at the Livestock farm of Department of Animal Science, Faculty of Agriculture, Eastern University Sri Lanka.

The experiment was conducted during the period of February to April 2019 with four different spacing such as 50 cm x 25 cm, 50 cm x 45 cm, 50 cm x 65 cm and 50 cm x 85 cm with five blocks under randomized complete block design. Growth parameters (plant height, leaf length, leaf width number of tillers per clump, leaf area) were measured at two-week intervals from 4th week up to the 8th week. In addition, productivity of fodders such as yield and proximate composition of the forage also measured.

Collected data were subjected to Analysis of Variance (ANOVA). The means were separated using Duncan's multiple range test at 0.05 significance level. Results obtained indicated that productivity of CO3 is superior in 50 cm x 45 cm spacing of growth under the conditions in Eastern University Livestock farm, and resulted the highest ($p<0.05$) dry matter yield of 56.19 g per plant in 50 cm x 45 cm spacing. And lowest dry matter yield of 38.49 g showed 50 cm x 85 cm spacing. In terms of chemical composition 50 cm x 45 cm spacing showed highest total ash content (16.68%), crude fat content (5.94%) and crude fiber content (33.13%) on dry matter basis.

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