AGRONOMY AND DIGESTIBILITY CHARACTERISTICS OF NEW NAPIER HYBRIDS HARVESTED AT DIFFERENT HARVESTING INTERVALS

W.C.P. Wimalarathna[1], W.M.P.B. Weerasinghe[2], M.W.D.C. Weerathunga[2], U.W.G.D.N. Udagama[2] and S.C. Somasiri[1]

[1]Department of Animal and Food Sciences, Faculty of Agriculture, Rajarata University of Sri Lanka, Anuradhapura, Sri Lanka.
[2]Veterinary Research Institute, Gannoruwa, Peradeniya, Sri Lanka.

An experiment was conducted to evaluate the agronomic parameters and nutritive quality of recently introduced Napier (*Pennisetum purpureum*) hybrid fodder varieties: Cumbu Napier hybrid *CO* (BN) *5* (*CO5*) (*Pennisetum glaucum* × *P. purpureum schumach*) and *Sampoorna*/DHN-6 (*Bajra* Line-IPM14188 × Napier line-FD184) cultivated for a period of six months under rain-fed conditions from December 2019 to June 2020 at the Research farm of the Veterinary Research Institute (VRI), *Gannoruwa*. The experimental design was a two-factor factorial Randomized Complete Block with two cultivars and five harvesting intervals: 4, 6, 8, 10 and 12 weeks. The grasses were cultivated in 30 plots with 10 bushes per plot and growth parameters (plant height, number of tillers, stem diameter, leaf width, and number of leaves per plant) were measured. Chemical composition, *In-vitro* Organic Matter Digestibility (IVOMD) and *In-vitro* Metabolizable Energy (IVME) contents were evaluated at weekly intervals. Plant height and number of tillers were significantly higher ($p<0.05$) in *Sampoorna* compared to *CO5* whereas other growth parameters were not significantly different. Crude protein (CP) content was higher ($p<0.05$) in *CO5* compared to *Sampoorna* at 6 to 12 weeks harvests. However, crude fiber (CF) content was higher ($p<0.05$) in *CO5* in 8 and 10 weeks but by the week 12 *Sampoorna* had higher ($p<0.05$) CF content than that of *CO5*. Both IVOMD and IVME were higher ($p<0.05$) in *Sampoorna* from week 4 to 8. But from week 10 to 12 *CO5* had significantly higher ($p<0.05$) IVOMD and IVME contents. *Sampoorna* had higher ($p<0.05$) acid detergent fibre content from week 4 to week 10 and high ($p<0.05$) neutral detergent fibre contents from week 6 to week 12. Thus, in conclusion both *Sampoorna and CO5* had showed superior agronomic characters under mid country conditions and based on CP, IVOMD and IVME *CO5* can be harvested between 10th and 12th weeks' cutting intervals.

Keywords: Chemical composition, Growth parameters, Harvesting intervals, *In-vitro* digestion, *Pennisetum purpureum* hybrids