

NUTRITIVE VALUE AND SILAGE QUALITY IN FODDER SORGHUM [Sorghum bicolor (L.) Moench], HYBRID NAPIER (Pennisetum americanum × Pennisetum purpureum), AND MAIZE (Zea mays) GROWN IN MID COUNTRY, SRI LANKA

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Production of high quality fodder varieties is vital for strengthening the dairy sector in Sri Lanka. Therefore, present study was carried out to evaluate the yield, nutritive value and silage quality of fodder Sorghum var. sugargraze, hybrid Napier var. CO-3, and Maize var. Pacific 984 grown in mid country, Sri Lanka. Field experiment was conducted as a Randomized Complete Block Design. Two harvests were obtained at 50% flowering stage and silage was prepared only using first harvest. Plant dry matter (DM), crude protein (CP), gross energy (GE), soluble carbohydrate (NSC) and oxalate contents were analyzed. Silage pH, lactic acid contents and titratable acidity were measured. Plant fresh and DM yields were significantly different ($p < 0.05$) and the highest yield was recorded for Sorghum var. sugargraze. Oxalate contents were significantly lower ($p < 0.05$) in Sorghum var. sugargraze and Maize var. pacific 984 compared to hybrid Napier var. CO-3. There were no differences ($p > 0.05$) in GE contents among the varieties. However, higher NSC contents were recorded for Sorghum var. sugargraze. Plant CP content was significantly higher ($p < 0.05$) in Sorghum var. sugargraze and hybrid Napier var. CO-3 compared to Maize var. pacific 984. Silage, pH and titratable acidity were significantly different ($p < 0.05$) and the lowest pH and highest titratable acidity were recorded in Sorghum var. sugargraze. Therefore, it can be concluded that Sorghum var. sugargraze; in fresh form or silage could be effectively utilized to increase nutrition as status of dairy cows in Sri Lanka.

Keywords: CO-3, Maize, Nutritive qualities, Silage, Sorghum