

Herbage Yield and Nutritional Potential of Three Fodder Grass in Low-Country Wet Zone Sri Lanka: A Preliminary Study

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Growing of improved fodders is needed to be popularized among farmers to strengthen the dairy sector in Sri Lanka. For smallholder farmers with limited production capacity, finding enough feed during the seasonal fodder deficit is always a problem. One of the solutions to mitigate the short supply during off-season is the conservation of surplus production as silage or hay. A field experiment was conducted to evaluate the growth, pasture yield and chemical composition of three fodder grasses and evaluate the silage quality. This study was conducted at AQUINAS farm from March to September, 2019 with three treatments consisted of sorghum (variety Sugar graze), maize (variety Pacific 984), and hybrid Napier (variety CO-3), with three replicates under randomized complete block design (RCBD). Growth parameters were evaluated and crops were harvested at the 10th week after planting to prepare wilted silage. The silages were prepared by adding 3% rice bran, 15% molasses and 2% urea (w/w) while physical and pH evaluation was performed. The highest fresh yield (50.6 ± 1.17 t/ha) was in maize with a dry matter yield of 15.2 ± 0.52 t/ha whereas the lowest fresh yield (32.8 ± 1.5 t/ha) was in CO-3. The highest values for crude protein (13.4 ± 0.56 %) and crude fiber (36 ± 0.04 %) were observed in sorghum whereas, maize reported the lowest amount of crude protein (6.92 ± 0.15 %) while the lowest crude fiber content (31 ± 0.17 %) was in CO-3 at the time of harvesting. The highest ash content (15.8 ± 0.2 %) was recorded in CO-3. The pH value of the silages of maize and sorghum were significantly lower ($p < 0.05$) compared to hybrid Napier. Maize and sorghum performed better than Napier in terms of growth, yield, and nutrient composition. The results revealed that the variety Pacific 984 and Sugar graze are potential feed resources to prepare silage to feed dairy cattle in smallholder farms.

Keywords: Hybrid Napier, Maize, Silage, Smallholder-farms, Sorghum

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