

NUTRITIONAL QUALITY OF FRESH FORAGE AND SILAGE FROM SELECTED CORN (*Zea mays*) VARIETIES

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Corn silage is a popular nutritious feed for ruminants and there is a great potential to use fresh forage or silage in Sri Lankan dairy industry. Variety and maturity stages are the key factors affecting nutritional quality of fresh forage and silage but, these factors have not yet been studied under local conditions. The objective of this study was to evaluate the nutritional quality of forage and silage at different maturity stages of selected hybrid corn varieties namely, Sampath, Pacific, Super and Giant. A field experiment was conducted as a Randomized Complete Block Design in three factor factorial treatment arrangement with four replicates. Plants were harvested at two maturity stages (milk line one-third and two-third kernel) and silage were prepared. Representative samples were obtained from forage and silage for proximate analysis. There were three-way interactions among the factors; variety, stage and form (fresh forage and silage) for crude fiber, ash, crude protein and gross energy contents. Higher crude protein contents were recorded in varieties Super, Sampath and Pacific compared to Giant, whereas higher energy contents were recorded in varieties Super, Sampath and Giant, compared to Pacific. Variety Super had the lowest fiber content. Higher amount of crude protein was observed in fresh forage than silage. However, energy and dry matter contents were higher in silage compared to forage. Milk line two-third kernel stage showed the highest crude protein contents while with milk line one-third kernel stage had a higher energy and dry matter contents. Thus, it can be concluded that nutrient contents in corn depend on variety, maturity stage and form of feeding.

Keywords: Corn silage, Maturity stages, Milk line, Nutritional quality, Varieties