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Sugarcane tops and additives influence nutritional quality and fermentation characteristics of mixed silage prepared with rice straw

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Abstract
The present study was carried out to evaluate the nutritional quality and fermentation characteristics of agricultural waste based mixed silage comprising of paddy straw (PS) and sugarcane tops (SCT). Total of five combinations of PS and SCT in the ratio of 100:0, 75:25, 50:50, 25:75 and 0:100 were prepared with no additives, 2% urea, 1% molasses, 2% molasses, 1% urea+1% molasses. The silage material was packed in plastic silos and stored at room temperature for 45 days. Acid detergent fibre (ADF), neutral detergent fibre (NDF), crude fibre (CF), ash, pH and dry weight (DW) increased with increase in the proportion of paddy straw in all combinations though a reverse trend was observed for crude protein (CP), ammonical N, *in vitro* dry matter digestibility (IVDMD), oxalate, net gas production (NGP) and volatile fatty acids (VFA). As a result of 2% urea treatment IVDMD, CP, ADL, tannins and NGP increased by 15.01%, 35.84%, 10.90%, 11.81% and 67.17%, respectively over control. Urea treatment considerably reduced the oxalate content of sugarcane tops. In the present study, silage prepared from 0:100 and 25:75 ratios of paddy straw: sugarcane tops with additive 1% urea+1% molasses had good aroma and fermentation characteristics and could be used in silage formation. Silage prepared from pure SCT also showed good fermentation characteristics but with low CP content.

Keywords: Fermentation characteristics, Nutritional quality, Paddy straw, Silage, Sugar cane tops