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Effects of molasses levels and growing conditions on nutritive value and fermentation quality of *Opuntia* cladodes silage

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1 ABSTRACT

The spineless *Opuntia ficus-indica* fruit (Prickly pear) industry in South Africa has increased in recent years and large quantities of cladodes are produced as a feed source for livestock. The objective of the study was to determine the effect of molasses levels and growing conditions on nutritive value and fermentation characteristics of *Opuntia* cladodes silage. The cladodes were removed by pruning from a Shaloom Farm outside Mahikeng in Burhmansdrift, North West Province. The following parameters were determined: dry matter, crude protein, acid detergent fibre, neutral detergent fibre, ether extract, pH, lactic acid and water-soluble carbohydrates. There were significant varietal, growing condition and molasses inclusion level interaction effects (P<0.05) on dry matter, moisture, crude protein, neutral detergent fibre, acid detergent fibre and fat contents. The inclusion of molasses (at 8%, 16% and 24%) into different types of prickly pear cladodes resulted in lower dry matter content as compared to without inclusion (0%) of molasses. The reason could be due to high moisture content produced during fermentation. Addition of molasses into prickly pear cladodes in this study resulted in lower acid detergent fibre; neutral detergent fibre and ether extract contents. The higher inclusion levels of molasses for variety *Roedtan* in both dry and irrigated lands resulted in a higher crude protein content. Lactic acid content from different cladode silages in this study varied from 46.5 to 100 g/kg DM. Animal performance testing to measure the digestibility and palatability of these two promising varieties is recommended to evaluate their effectiveness under practical feeding conditions.