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Evaluation of *Prosopis juliflora* Pods as Potential Feed for Livestock in the Arid Tropics

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Abstract

Prosopis juliflora (Meskit) is a tree originating in America and has been introduced over the past centuries to many parts of the world mainly to combat desertification. Its pods and leaves have been used in the dry tropics for feeding ruminants. However, feed intake of the leaves and the pods is low. The current study aimed at evaluating the potential of raw and processed prosopis pods as a livestock feed. The pods were processed by the following methods: soaking, roasting, boiling and autoclaving for 10, 20, 30, 40 and 50 minutes. Proximate chemical analyses was carried out on the pods. *In vitro* gas production was determined using goat rumen liquor and following published routine techniques. The raw dried pods contained 90.2 % dry matter (DM) and 12.8, 18.3, 36.9, 24.1, 12.8, 32.3, 4.5, 1.0, 5.1, 4.2, 0.04 and 0.06 %/DM crude protein, crude fibre, neutral detergent fibre (NDF), acid detergent fibre (ADF), hemicellulose, cellulose, lignin, ether extract, ash, Ca and P, respectively. It also contained 18.7 kcal g^{-1} gross energy. The treated pods produced more gas than Rhodesgrass hay (RGH), the most dominantly used roughage in Oman. There was a trend that processing of pods improved gas production with soaked pods producing the highest cumulative gas value. Autoclaved samples also produced gas volumes comparable to soaked pods but higher than those of non-treated pods or RGH, with autoclaving for 20 and 30 minutes producing best results. This study indicated that *Prosopis juliflora* pods are a potential drought feed especially if they are processed by soaking and roasting. An *in vivo* experiment with native sheep and goats to evaluate the potential of using the pods in feeds will be conducted soon.

Keywords: Chemical composition, gas production, livestock, pods, *Prosopis juliflora*

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