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## Effect of Supplementation of Air-dried *Prosopis Juliflora* Pods with Low Methane Production on Carcass Characteristics of Yearling Sheep

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### Abstract

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Food from animal sources contributes 18 % of global calories (kcal) and 25 % of global protein consumptions. However, livestock sector contributes to greenhouse gas emissions from which methane is the crucial one. In this regard, pods of unconventional feed resources were investigated through *in vitro* of which *Prosopis juliflora* pods (PJP) was identified as potential candidate in mitigating enteric methane (CH<sub>4</sub>). This study was thus conducted to assess the suitability of supplementing PJP, which is known for its low CH<sub>4</sub> production potential, on body weight gain and carcass components in local sheep. A total of 25 yearling local sheep with initial body weight of 16.0±1.68 kg were randomly assigned to five treatment diets. All sheep received a basal diet of natural grass hay ad libitum and 270 g/head/day concentrate and the experiment lasted for 82 days exclusive of the adaptation period. The treatment diets contain a control diet without supplementation (T1) and diets supplemented with air-dried PJP at a rate of 50 (T2), 100 (T3) and 150 (T4) and 200 g/head/day (T5). The results indicated that the average slaughter weight of sheep reared on T1, T2, T3, T4 and T5 was 20.7, 21.5, 19.8, 19.7 and 19.2 kg, respectively and did not differ from each other ( $p > 0.05$ ). Similarly, the average hot carcass weight was 8.01, 8.10, 7.73, 7.38 and 7.20 kg for yearling sheep fed with T1, T2, T3, T4 and T5 diets and did not differ significantly. Although not significant, the highest dressing percentage and lumbar weight was observed in sheep fed with T3 diet. Sheep reared in T2 diet had numerically higher rib-eye area than those fed with other treatments. Moreover, no significant difference was found in average daily body weight gain between treatments. In conclusion, the supplementation of PJP to yearling local sheep improved carcass components can be recommend to supplement poor quality forages while reducing the enteric CH<sub>4</sub> production from small ruminant animals.

**Keywords:** Carcass characteristics, enteric methane, local sheep, natural grass hay, *Prosopis juliflora* pod, supplementation