

## Study of nutritive value and anti-nutritive compounds of *Prosopis juliflora* pods and leaves and effects of their use on Performance of Hormozgan Tali goats

### Abstract:

*Mesquite* or *Kahoor* (*Prosopis Juliflora swartz*) a member of family Leguminosae is a perennial, fast-growing, ever-green and drought resistant shrub or tree that planted and developed in the south parts of Iran and be used for preventing soil erosion and stability of sand dunes. The young branches (browses) and pods of Kahoor can be use animal feed. The aim of this study was determining the chemical composition, secondary metabolites and nutritive value of *Prosopis Juliflora* pods and leaves and to using *Prosopis Juliflora* pods (PJP) and leaves in diet on the growth Performance of fattening Tali goats. In this experiment 24 *Kahoor* pods and leaves samples were collected randomly from three intensive cultivated planted areas in Hormozgan province. Samples sun dried and mixed to get homogenous and then were used for chemical composition and secondary metabolites (with used GC-MS) and In vivo digestibility. Thirty yearling Tali goats of mean weight of  $13.10\text{kg} \pm 1.5$  (mean $\pm$ SD) were used to measure the effects of feeding of ground prosopis pods and leaves to replace a commercial concentrate as a supplement to a basal diet of bermuda grass hay. Animal were equally randomly divided into five dietary treatments in a randomized complete block design based on their initial body weight. The feeding trial was continued for one hundred days followed by a seven days of digestibility analysis. Experimental Rations. diet 1: Bermuda grass hay (BGH); diet 2: Garden grass hay (BGH + 300 g commercial concentrate (CM)); diet 3: BGH + 300 g ground *P. juliflora* pods (PJP); diet 4: GGH + 150 g each ground *P. juliflora* pods and leaves mix (PJPLM) and diet 5: BGH + 300 g ground *P. juliflora* leaves (PJL). Measurements of feed intake, live weight change and digestibility were determined during a 84-day experimental period. The kids were weighted in initial trial and every 2 weeks after 16 h feed deprivation using a suspended weighing scale and calculated their weight changes. The average body weight gain, average dry matter intake and feed conversion were determined. Chemical composition and digestibility, Feed intake, body weight changes and feed conversion data were analyzed using the SAS 9.1(2001) software and GLM procedures. The result of this experiment showed that the chemical composition mean of PJP and PJL samples were contained dry matter, crude protein, Ether extract, neutral detergent fiber, acid detergent fiber, calcium, phosphorus, 42.31, 20.35, 1.07, 54.22, 31.84, 2.26, 0.27, 0.01, 1.53 and 88.42, 13.82, 1.38, 40.30, 26.98, 1.04, 0.21, 0.01, 1.78 (on DM basis) respectively. The average digestibility coefficient pods and leaves for Dry matter, crude protein, Neutral detergent fiber and Acid detergent fiber is 55.74, 40.53, 59.78, 43.05 and 60.99, 48.08, 56.25, 47.05 respectively. The average daily gain for Kids 42.77g, 71.29g, 69.40g, 49.88g and 34.27g and feed conversion efficiency were, 13.7, 6.62, 6.78, 7.42 and 10.91 respectively for Kids received PJP and PJL diets that were statistically different. The result of this study indicated that the PJP similar to commercial concentrate has supplied kids requirements that can be suitable replacement for commercial concentrate in fattening kids diets. Results indicated that pods and leaves contain a large amount of essential nutritive material and can used T.M.R. with other feed in maintenance conditions animal rations after drying and reducing anti nutrition materials. Also; that PJP and PJL can be used in fattening kids without negative and side effect on growth performance goats and reduced 30% the feeding cost economically.

**Key words:** Secondary Metabolites, Nutritive Value, *Prosopis Juliflora*, Composition Chemical, Tali Goats, Performance



Zabol University  
Graduate school  
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The Thesis Submitted for the Degree of Ph.D  
(in the field of Animal Nutrition)

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2018  
Summer