



Research Paper

## Chemical Investigation of Prosopis Juliflora Seeds for Human Nutrition

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### ABSTRACT

*Prosopis juliflora* commonly called mesquite belongs to family Fabaceae. A number of compounds have been isolated from various the parts of this plant. In the present communication, we have reported proximate and nutritive analysis of seeds of *Prosopis juliflora*. The aim of present study is to evaluate this plant for potential use in herbal durg system or in nutritional supplement.

### I. INTRODUCTION

*Prosopis juliflora* is a shrub or small tree of family Fabaceae. It is native to Mexico but has become established as an invasive weed in Asia, Africa. Seeds of the plant are consumed as fodder rather as staple diet, since, times immemorial by Aztec tribe of Mexico.

Poor landless tribals in Udaipur, Banswara, Dungarpur, and Kota district consume various forest seeds including mesquite seeds during famine and scarcity conditions.

The plant is resistant to drought and is of high nutritional value, especially its fruits which are good palatable to almost all domestic animals. It is an evergreen tree bearing fruit even in the best season of the year. Though tribals are consuming seeds of the plant, yet its suitability for human diet has been realized less. In spite of some studies done, it has not received the attention it deserves. In order to popularise it for human diet an insight into the nutritional value by chemical analysis was taken up.

**EXPERIMENTAL** Seeds of *Prosopis juliflora* were collected from forests of Kota division by courtesy of Social Forestry Division and were identified with the help of RUBL Herbarium Jaipur. The pods were dried to release seeds, which were subsequently processed for use in various chemical analysis. Seeds were ground immediately by passing through 1 mm sieve in Cyclotec Sample Mill, Tecator. The grounded seeds were used for proximate analysis, which were by procedures of AOAC. Determination of moisture was done by oven method. Ash content was determined in Muffle Furnace at 550°C. Dry content was determined as (100-% Moisture). Total carbohydrate was estimated by difference (100-% moisture+% ash+% fat+% protein). Protein content was determined by estimate nitrogen content of material and multiplying by factor of 6.25. Fat was determined by extracting the dry material with hexane. Total dietary fibre was determined by using TDF-100KIT. Results of proximate analysis and mineral analysis are tabulated in Tables 1 and 2 respectively.

TABLE NO. 1

S.No.	Component	Percentage
(i)	Moisture	5.3
(ii)	Dry Matter	94.7
(iii)	Ash	3.25
(iv)	Protein	32.5
(v)	Fat	3.5
(vi)	Carbohydrate	55.4
(vii)	Dietary Fibre	60.2

TABLE NO. 2

S.No.	Mineral Element	Amount mg/100 gm. wt-wt basis
(i)	Calcium	258
(ii)	Phosphorus	563.4
(iii)	Iron	19.43

Calcium was estimated as calcium oxalate by precipitating calcium from ash solution with saturated ammonium oxalate solution.

Phosphorus was estimated by measuring colorimetrically the blue colour formed when ash solution is treated with ammonium molybdate and phosphomolybdate thus, formed is reduced. Iron was determined colorimetrically by making use of the fact that ferric ion gives blood red colour with KSCN.

## **II. RESULT AND DISCUSSION**

It is evident from results of Table 1 and 2. Seeds of *Prosopis juliflora* are rich in nutrient values, except in case of dietary fibre it exceeds the recommended requirement. Hence these seeds are ideally suited for human consumption and may also play a role in reducing the risk of colon cancer and other associated diseases.

### **REFERENCES**

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