



Prosopis juliflora

A Valuable Species for Arid and Semi-arid Tropics

Discussion Papers for

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Prosopis juliflora: Past, Present and Future

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***Prosopis juliflora*: A Valuable Shrub for Arid and Semi-arid Regions**

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Prosopis juliflora (Sw.) DC (Vilayati Babool), member of Mimosaceae family, native to South America, Central America and the Caribbean, is a perennial deciduous thorny shrub with fast growing, hardy, drought-resistant and remarkable coppicing power. It is an aggressive and invading species that has spread rapidly due to its great tolerance to the extremely refractory conditions of the most parts of arid and semi-arid zone and survived where other tree species have failed. Today it is the tree species utilized for its each and every part in various ways on a commercial basis in arid and semi-arid regions. *Prosopis* pods contain: protein, 16.5%; fat, 4.2%; carbohydrate, 57%; fibre, 16.8%; ash, 5.4%; calcium, 0.33%; phosphorus, 0.44% and 12.46 to 15.51 ppm copper, 22.11 to 22.30 ppm manganese, 18.30 to 28.01 ppm zinc, and 203 to 638.8 ppm iron. *Prosopis* pods are a good source of livestock fodder feed in drought prone areas which is cheaper, more nutritious and locally available fodder resource. Fruit pods are high in sugar & protein and are a rich food source for man and beast. Roasted pods provide substitute for coffee powder. *Prosopis* exudate gum is comparable to gum arabic. Nectar from *P. juliflora* yields a superior honey. The wood is used most of all for fuel but also for parquet floors, furniture, turnery items, fencepost, pilings, etc. Its larger branches and trunks yield a high quality timber, comparable in colour, finish and physical attributes to Indian rosewood and other commercial hardwoods. Writing and printing papers could be produced from *Prosopis juliflora* logs having 30 to 50 cm in girth with 50% cellulose and 30% lignin. *Prosopis juliflora* is hardest of the hard woods (density more than 300 kg m³ and specific gravity 0.70) and most suitable for charcoal making and electricity generation. *Prosopis* bark extract is used as an antiseptic on wounds, and gum is used to treat eye infections. Considering the availability of many biologically important alkaloids in the leaves of *P. juliflora*, the pooled alkaloid extract could be used against important phytopathogen. Although no direct data on N-fixation of *Prosopis* are available, however, tree legumes (exclusive of Caesalpiniaceae) fix N between 155 and 580 kg ha⁻¹ yr⁻¹. Soils under the crowns of legumes in the desert usually have 10 times more N (0.3%) than those under non nitrogen fixers (0.03%). Organic acid produced from litter of *P. juliflora* facilitate dissolution of precipitated calcium carbonate already present in sodic soils. Thus, help in reclamation of the sodic soil. Due to fast growing nature and higher biomass production potential, a considerable quantity of carbon could be sequestered in

woody biomass of *Prosopis juliflora*. The tree has played a pivotal role in combating desertification and drought through its intensive plantation on refractory areas to enhance their ecostability. Hence, time has come to pool the scientific and research findings for multiple agro-industrial uses of *Prosopis juliflora*. The inherent capacity and potentiality of *Prosopis* can be converted into an even greater asset besides generating tremendous local employment opportunities and numerous benefits through application of scientific and technical methods. There are a much more possibilities to explore the feasibility of obtaining various new products and services from *P. juliflora*.

