

## STUDY OF PERCENTAGE OF MOISTURE AND ASH CONTENT OF POLLENS OF *Prosopis juliflora* AND SOLUBILITIES IN DIFFERENT SOLVENTS

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### ABSTRACT

Phytochemical studies in various parts of plants i.e. root, stem, leaf and in seed are very common but detection of chemicals in the pollens is still very rare. The present work deals with the determination of percentage of ash and moisture in the pollens of *Prosopis juliflora*. Solubility in different solvents has also been determined.

**Key words:** Moisture percentage, ash content, pollens, *Prosopis juliflora* and solvents.

*Prosopis juliflora* commonly known as *vilayati kikkar*, an exotic species has been found in many parts of India including city Bikaner. Pollens of various plants have been found to cause allergy in human being as well as in animals<sup>1</sup>. Although the exact cause of allergy and its biochemical mechanism is still not known. Thus in order to investigate the biochemical pathways of allergenic actions it is essential to detect the chemicals found in plant particularly in pollen. Phytochemical studies in various parts of plants i.e. root, stem, leaf and in seed are very common<sup>2-4</sup>, but detection of chemicals in the pollens is still very rare.

The present work deals with the study of few physico-chemical parameters, viz. -percentage of moisture, ash content and solubility in cold water, hot water, sodium hydroxide, hydrochloric acid for pollens of *Prosopis juliflora*. Solubility has also been determined in micellar medium.

### Moisture content

The moisture content of two samples of pollens (A) and (B) was determined at room temperature (34°C). 1 g of each dried sample (A) and (B) were kept in an oven at 105°C for 2 h. It was weighed and kept in the oven till it showed constant weight.

Table - 1

Sample	Moisture (%)	Ash Content (%)	Cold water solubility (%)	Hot water Solubility (%)	Triton X-100 micellar solubility(%)	1% NaOH solubility (%)	1%HCl solubility (%)
A	30.1	12.4	25.5	28.5	31.5	71.5	62.5
B	24.3	15.4	24.3	27.0	36.5	68.5	56.5

**Ash content**

The ash content of (A) and (B) was carried out at room temperature (35°C). 1 g of each dried sample (A) and (B) were taken in previously weighed silica crucible and heated over Bunsen flame. Further, it was placed in desiccators and weighed till it showed constant weight.

**Cold water solubility**

1 g of each dried sample (A) and (B) was put in 100 ml distilled water for 48 h. It was filtered through a sintered glass crucible, washed with distilled water, dried in an oven at 105°C and weighed till it showed constant weight.

**Hot water solubility**

1 g of each dried sample (A) and (B) was put in 100 ml distilled water and was heated over boiling water bath for 2 h and filtered through a sintered glass crucible. The residue was washed with hot water, dried in an oven and weighed till it showed constant weight.

**Solubility in Micellar solution:** 1 g of each dried sample (A) and (B) was put in Triton X-100 micellar solution for 48 h. It was filtered through a sintered glass crucible, washed with distilled water, dried in an oven at 105°C and weighed till it showed constant weight.

**Solubility in 1% HCl:**

1 g of each dried sample (A) and (B) was put in 1% 100 ml HCl solution. It was heated over a water bath for 2 h and filtered through a sintered glass crucible, washed with hot water, then by 10%

aqueous ammonium hydroxide followed by cold water. The residue was dried and weighed till it showed constant weight.

**Solubility in 1 % NaOH**

1 g of each dried sample (A) and (B) was put in 1% 100 ml sodium hydroxide. It was heated over a water bath for 2 h and filtered through a sintered glass crucible washed with hot water, then by 10% aqueous acetic acid followed by cold water. The residue was dried and weighed till it showed constant weight.

*Prosopis juliflora* a very variable, evergreen spiny or sometimes unarmed tree or shrub, with drooping branches, found either in a wild or cultivated state in the drier parts of India. Bark grayish brown: leaves bipinnate with 2-4 Pairs of pinnae: Pinnules 10-46 pairs, 5-20 mm.long: flowers small, Yellowish in dense spikes: pods yellow, 10-25 cm.x 8-15 mm. Straight or falcate, flat or cylindrical, often with transverse depressions between the seeds: seeds 10-30 in a pod, ovoid, flattened, 7 mm.x 3 mm., hard, yellowish brown, shiny.<sup>5</sup> Flowers of *Prosopis juliflora* are small, yellowish in dense spikes with pods yellow. 10-25 cm.x 8-15 mm. These are either straight or falcate, flat or cylindrical, often with transverse depressions between the seeds. Pollens were collected from flowers and dried after sieving and crushing. Ash and moisture contents were determined are reported in following table along with the solubility in different medium.

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