

## DIVERSITY IN NATIVE LEGUMES OF THE INDIAN THAR DESERT AND A LOOK INTO SOCIO-ECONOMIC ASPECT

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The arid and semi arid regions of Rajasthan are characterized by low precipitation, high and hot summer winds, high thermal load and saline tracts. More than 60% of the hot and arid regions of India are in the state of Rajasthan. This region harbors several nodulating native as well as exotic legumes and associated diverse rhizobia. Beside their role in soil fertility and sand stabilization, these legumes are sources of food, fodder, medicine, shelter and firewood for the local inhabitants.

*Acacia tortilis*, an exotic shrub, is widely used for sand dune stabilization while *Prosopis juliflora* is used as fuel in the form of charcoal and also firewood for cooking. *Prosopis cineraria* is the only tree legume growing in the North West of the Rajasthan state. It is native to the desert and is source of food, nutritious fodder, timber and shelter. It is worshipped by the villagers who in the past have lost their lives (250 people) to save it from being cut down by the then soldiers of the King of Jodhpur state. Other keystone legume species of this region are *Crotalaria burhia*, *Tephrosia* (7 species), *Indigofera* (9 species), *Rhynchosia* (3 species), *Vigna trilobata*, *Cyamopsis tetragonoloba*, *Taverniera cunefolia*, *Acacia jacquemontii*, *Acacia Senegal* and *Mimosa hamata*. Species of *Indigofera*, *Crotalaria* and *Rhynchosia* are good for grazing. All these plants are used by the people in different forms particularly at the time of famine. Some have long been included in dry land agricultural practices where land holders keep part of their land for naturally growing wild legumes for grazing and then in next year grow pulses followed by pearl millet to take advantage of fertile soil.

There is great diversity in nodulating microsymbionts of the native legumes of this region which includes species of *Rhizobium*, *Bradyrhizobium*, *Sinorhizobium*, *Methylobacterium*, *Cupriavidus taiwanensis* and *Burkholderia phymatumare*. Some species are nodulated by more than one species. Most of the rhizobia are fast growing, high EPS producing and tolerant to elevated salinity and high temperature. Several nodule endophytes have been found to show plant growth regulating traits.

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