

Phytogeographical Distribution of *Acacia senegal* of Churu District, Rajasthan

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Abstract: As we know that the area under district i.e. Churu district belongs to the State of Rajasthan, the State of Rajasthan is located in north-western India.

1. Introduction

The district of Churu lies in the north-east of Rajasthan State at an altitude of 286.207 metres above the mean sea level. From geographical spread point of view has extension from 27°24' to 29° north latitudes and 73°40' to 75°41' east longitudes. It is bounded by Hanumangarh in north, Bikaner in west, Nagaur in south and Sikar, Jhunjhunu districts and boundaries of Haryana State in the east. It covers six tehsils namely : Taranagar, Rajgarh, Churu, Sardarshahr, Ratangarh and Sujangarh. (Figure1-1)

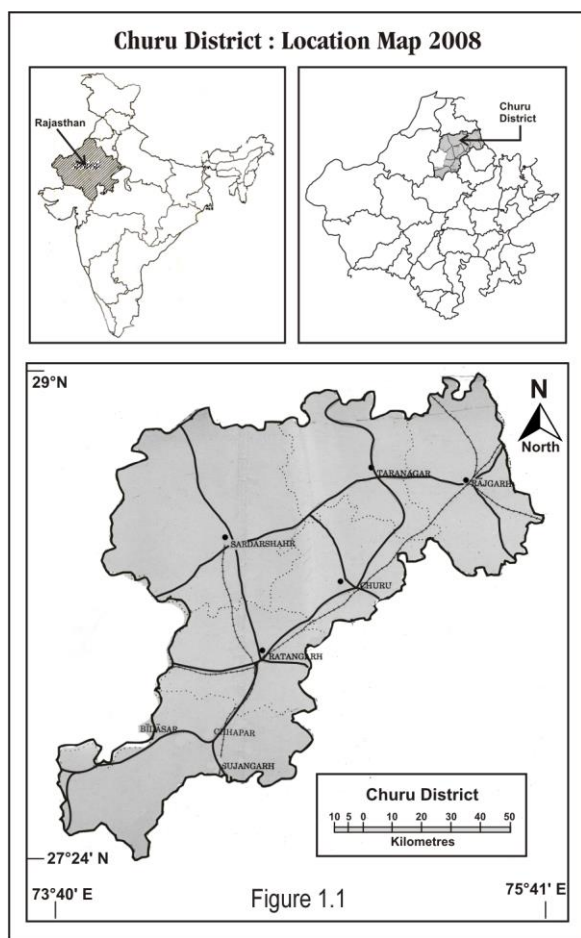


Figure 1.1

Source : Based on Survey of India Map with The Permission of the Surveyor General of India

2. Review Of Literature

The area under research work was studied by following botanists and time to time viz; first of all the Sekhawati region was touched from vegetational study point of view by Mulay and Ratnam (1950), Bikaner and pilani neighbourhood areas by Joshi (1956 and 1958), vegetation of chirawa by Nair (1956), again Nair and Joshi for Pilani and neighbourhood areas (1957), vegetation of harsh nath in aravalli's hills was studied by Nair and Nathawat (1957), vegetation of Jhunjhunu, Manderella and neighbourhood by Nair (1961), vegetation of ajit sagar dam by Nair and Kanodia (1959); Nair, Kandodia and Thomas (1961) studied the vegetation of Khetri town and neighbourhood areas and vegetation of Lohargal and its neighbourhood areas of Sikar district by Nair and Malhotra (1961). After the work of Nair and Malhotra (1961), i.e. four decades ago. the area was again left for any sort of further research work in the field of applied Botany.

A significant, very authentic taxonomic work was contributed in the field of botany by Bhandari with the publication of a book Flora of the Indian desert (1990). From the field of applied phytogeography point of view. Charan gave a valuable contribution with a publication of a book on Plant Geography (1992). Bhattacharjee (2000) gave a very valuable authentic contribution through the publication of a book on Handbook of Medicinal Plants in which he presented the medicinal plants of Indian Sub-continental back ground with their coloured photographs also and Sharma (2007) gave a very valuable authentic contribution through the publication of a book on Medical Plant Geography.

3. Objectives

As the nature of the research work, it becomes the prime most duty of a phytogeographer to trace out to identify the plants and than their geographic interpretation from their origin point of view, their cartographic presentation from spatial distribution point of view and lastly also to prepare their layout planning map for on going plantation programme at least for the applied plant species for the area under study. The study will covers

also the change detection aspect in the green coverage of the area under study.

4. Hypothesis

Naturally, the present study will cover the present position of phytogeographic pattern of spatial distribution of applied plant species, so a phytogeographer can propose their allocation of sites of coinciding habitats from their conservation point of view for the welfare of future generation of the area under study.

we can conserve those plant species which have their applied values for the welfare of human beings inhabiting in that particular area or the area under study. for this purpose, a phytogeographer has to give an account of the layout maps of that area under study which covers the allocation of the sites with favourable habitats according to the nature of the existing applied plant species for the area under investigation.

5. Methodology

Applied categorization of those listed applied plant species will be carried out into their main applied categories, viz; plants for fuel purpose, plants for fodder purpose, plant species for medicinal use, plants for edible purpose, and plant species for commercial values.

To illustrate the frequency of distribution of particular plant species the prescribed method of Raunkier's will be exercised to show whether the particular plant species is rare, frequent, common or abundant for the area under investigation. The nature of habitats and the eco-climatic conditions will be dealt as a part and portion of the study to support the phyto-climatic account of the research problem for the area under study.

From phytogeographic study point of view, a cartographic interpretation of the multi-purpose plant species will be dealt at two levels i.e. at macro-level and at microlevel, basically it may be dealt phytogeographic sense.

PHYTO-GEOGRAPHY OF ACACIA SENEGAL

1. Name of the Specimen :

ACACIA SENEGAL

2. Local Name :

Kumat, Kumatio, Kumbhatia, Khairi

3. Botanical Name :

Acacia senegal

4. Family :

Mimosaceae

5. Morphology :

The plant species belongs to the family, Mimosaceae. It is a medium sized prickly tree. Its height varies in study area according to the change of habitat from 3 to 10 m. canopy appearance is like an umbrella which is very unique and distinct in the photographs of its favourite habitat. The trunk of the tree has distinct creamy colour (Plate : 1.1).

6. Flowering and Fruiting

Its flowers are fragrant. The period of flowering and fruiting starts from the month of July and remains up to November.

7. Vegetation Group

It belongs to the vegetation group of tree. From life-forms point of view the tree falls under 'microphanerophytes', and the leaves which are compound and bipinnate. From leaf - classes point of view the plant falls under class of "leptophylls". Xerophytic categorisation revealed that the tree by nature comes under the category of 'spiny and thorny', thus the stipules modified in to spines which works here as the organs of defence and reduce the rate of transpiration .



8. Eco-climatic Conditions and Habitat

Observations based on the selected study sites scattered throughout the area under study resulted that its distribution is unequal. It has no occurrence over the pure saline soil habitat, pure gravel and compact soil formations, and over the top of the huge sand dunes. As far as the rainfall distribution range is concerned it has occurrence in between 200 mm. To 700mm. Rain fall , thus it is found in arid and semi arid climate type.

9. Applied Uses

Out of five categories of applied categorisation it covers three categories : fuel, edible, and commercial.

A. Fuel Purpose:

Its fuel is not so of superior quality but in absence of any fuel variety people prefer it, its burning duration is also gentle, hence it is occasionally used as fuel.

B. Edible Purpose:

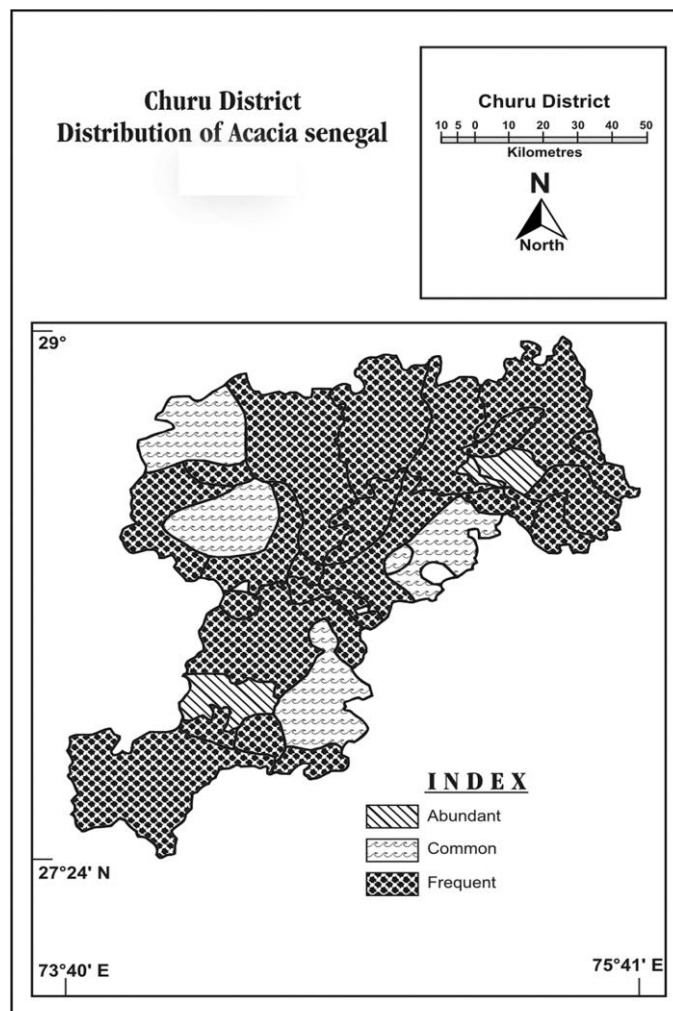
It produces two parts which are edible, gum and seeds. Former the gum, a very superior quality of gum is collected from this three i.e. it is one of the finest quality of gum of Indian arid zone. But generally it is mixed with other kinds of gum which thus makes it of inferior quality. Its gum is literature is known as the 'gum of arabia' and now locally called as a 'desi gund'. Later the seeds, locally called as 'kumatia and kumacha', these are raw young seeds have value as vegetable in the preparation of 'panchkuta' a special preparation on the occasion of festivals of 'akhatiz' and 'seal satam'.

C. Commercial Purpose:

Due to finest quality of gum production it has a commercial importance and sold in local market and worth of rupees 100 per kg. Its fruits are good for dry vegetables and their seeds are sold in the local market at the rate of Rs. 40 per kg. The fresh fruits are collected dried, preserved and later on used as vegetable.

10. Phyto-geographical Distribution

This tree covers a large portion of the earth's surface which extends from tropical Africa to Arabia and then to western India. It has a west ward extension which includes the country sites like Saudi Arabia, Iraq, Iran, Persia Afghanistan, Baluchistan, Sindh (Pakistan) and in India the area mainly covered are Rajasthan, Punjab, Saurashtra and Delhi . The particular tree has an obvious distribution throughout the area on hilly surface areas as an abundant. Although it shows frequent occurrence some times over the slope of the dunes but not over the crest and top of the dunes. It has frequent, common, abundant, and some times pure association over the areas the area under study.



Source : Forest Survey of India Dehradun, Forest Deptt. Govt. of Rajasthan, Jaipur & Field Survey

Phytogeographic pattern of distribution where as on foot hill areas it is found as, common occurrence. Tree community shows its common phytogeographic pattern of occurrence on south-western areas of Sujangarh where it has abundant occurrence in south-eastern areas of (Figure : 1.1). Thus, it has one category more spatial distribution in eastern portion of the district rather than western, respectively.

It has no occurrence in aquatic areas of the district but it stretches throughout frequently on the sand dunes and rarely on sandy plains habitats of. In old Alluvial plain part of the district it shows frequent pattern phytogeographic distribution as shown in figure : 1.1. Rarely it may not be seen in any area of Churu district.

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