

# Phytogeographical Distribution of *Azadirachta indica* in Churu District, Rajasthan

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**Abstract:** *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 ongoing plantation programme at least for the applied plant species for the area under study.*

**Keywords:** phytogeographe, identify the plants, plant, species

## 1. Introduction

Churu district belongs to the State of Rajasthan, the State of Rajasthan is located in north-western India, Neem, Margosa, Nimba Generally, it is found as a full sized tree, and it belongs to the family - Meliaceae. Leaves : Imparipinnate 20-37 cm. In length. Leaf-lets are apposite or alternate, obliquely falcate - lanceolate, serrate, dark green to greenish yellow in colour and bitter in test.

## 2. Study Area

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 as shown in figure : 2.1. 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.

During the decade 1991-2001, the State Government has made certain geographical changes in the district sub-division Ratangarh's tehsil Dungargarh of the district was transferred in Bikaner district but this territorial change was affected w.e.f. 1.4.2001, hence for the purpose of census, Dungargarh tehsil is treated as part of the Churu district but here the author for the purpose of study area i.e. Churu district, Dungargarh tehsil is not treated as part of the Churu district.

The total area of Churu district consist 1354623 sq. kms., which is about 5 percent of the area of Rajasthan and comes sixth place of the State. It is second bigger district in Bikaner division. The district is extended up to 150 kms. in east to west and 120 kms. in north to south. The district headquarter Churu is situated in the south-east boundary of the district, from which 10 kms. south-east the boundary of Jhunjhunu district is situated. The three fourth part of the area of the district is located in the west from head quarter.

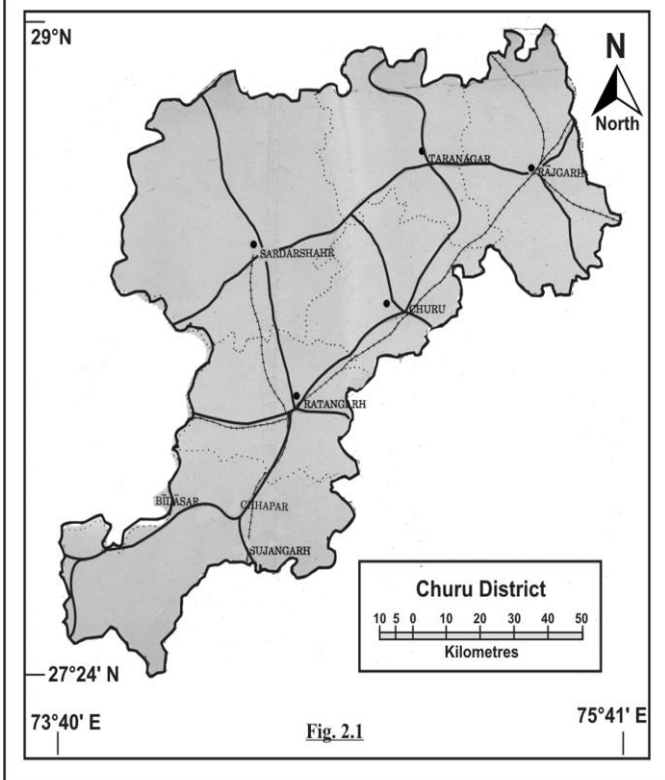
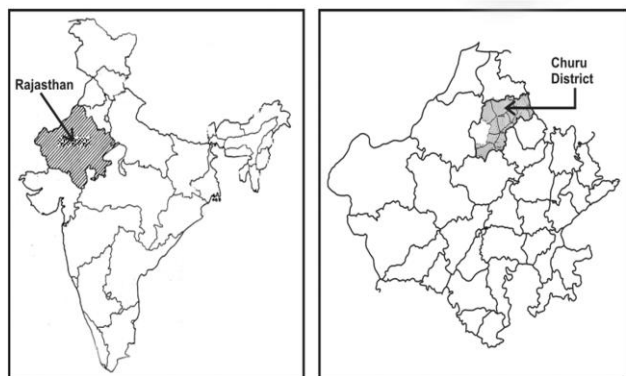
According the census of India (2011) Churu district covers about 2.97 percent of the total State's population. As far as the

forest and green coverage concerned, it directly or indirectly in influences the health environment of the area of the state's total. The density of population of the study area very low i.e. 148 persons per square kilometre. Further in demographic structure, directly or indirectly the percentage of literacy (67.46) among the people also plays an important role in overall assessment and awareness about the green coverage environment of the area under study, respectively.

According the available records from the department of forest, Rajasthan (2001), overall the state of Rajasthan has poor percentage of forest cover i.e. 9.49 percent only. Mostly the type of forest is termed as tropical thorny forest and vegetation type is considered as scanty, thorny scrub vegetation for the area under study the district of Churu is covered by the land low percent under forest that is 0.48 percent only.

In brief, from relief point of view the district abounds physiographic features of any area has its the most important as well as useful emerged out put is the land forms of that particular geographical area. As far as the aspect of land forms is concerned that among overall land forms regions of India, Churu area falls under the land form type known as "sand dunes shows the three distinct types of land forms in the study area, namely the undulating sandy plains, the sand dunes, talls and hills For better interpretation of physiographic characteristics of Churu district, the area under study.

### Churu District : Location Map



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

### 3. Name of the Specimen :

AZADIRACHTA INDICA

#### 3.1 Local Name :

Neem, Margosa, Nimba

#### 3.2 Botanical Name :

*Azadirachta indica*

#### 3.3 Family :

Meliaceae

#### 3.4 Morphology :

Generally, it is found as a full sized tree, and it belongs to the family - Meliaceae. Leaves : Imparipinnate 20-37 cm. In length. Leaf-lets are apposite or alternate, obliquely falcate - lanceolate, serrate, dark green to greenish yellow in colour and bitter in test. Flowers -white scented 5 mm. long pentamerous, stominal tube dentate anthers inserted inside. Fruit's -Drupe 1.2 to 1.8 cm. Long, oblong, 1-Seeded smooth greenish yellow in colour. Intensely bitter in taste. Bark - Rough greyish to brownish in colour channelled in shape about 10 mm. In thickness - with scally to fissured surface. Internally yellowish

in colour caminated and fibrous ( Plate :1).

#### 3.5 Flowering and Fruiting :

Its flowering period spreads from January to April and the flowers are yellow in auxiliary spikes. Its flowering period ranges from March-April to June.

#### 3.6 Vegetation Group:

It belongs to the vegetation group of tree. From life-form point of view it falls in the life- form group of 'meso-phanerophyte', and from leaf-class point of view it falls under the leaf-class of 'microphylls', it is deciduous nature of tree species. From xerophytic categorization point of view it's leaves are with waxy coated (neem oil) surface and has more sunkum stomata.



#### 3.7 Eco-climatic Conditions and Habitat :

It has wide range of rainfall distribution i.e. from 25 cm. to 150 cm. (total of average annual). Similarly it has occurrence in wide range of temperatures' i.e. 10°C (average mean monthly minimum temperature) and 50°C (average mean monthly maximum temperature). As soil type is concerned - it shows common occurrence on sandy plains, gravel formations, and stony and rocky, soil, also a marginal areas of riverine habitat soil formation. Thus, the tree bears arid, semi-arid, sub-humid and humid climate - as observed for the area under study. In nature, mostly it is observed with it's occurrence from plantation point of view more rather than it's natural growth distribution in phytogeographic pattern. Thus, it's tolerance limit of ecoclimatic conditions is broad weather it may be soil type, rainfall amount, temperature variations, relative humidity and heat waves or cold waves.

#### 4. Applied Uses:

Out of five, the tree has two applied categories viz; fuel, medicinal and commercial.

##### 4.1 Medicinal Purpose :

The tree as a whole by its each and every part and portion (except its roots) is medicinally useful. From medicinal applied aspect point of view, it is used for blood purification, in skin diseases, in fever, its twigs are best known from centuries back for the cure in toothache, in the cure of piles, and it is a strong antiallergic. It is used as a better natural determinant to protect costly garments from various types of insects.

At the name of parts and portion of the Neem tree's medicinal uses for the cure of diseases, the neem fruit's and leaves are used mainly as anti-septics and insecticides. Neem oil, nimbin and nimbidin are active against various fungi. The anti-insect principles have been commercialised in the form of vapaside and margosides. The drug is also attributed antifertility and anti-viral properties, and is being screened for efficacy in treatment of AIDS.

##### 4.2 Commercial Purpose :

The statistics of commercial evaluation of folklore of Neem trees covers the importance (as an antiseptic - whole life worship), Production - seed oil 10 kg./ tree/ year which has evaluation of Rs. 20/- kg., barkgum 2 kg./ tree/ tree year which has evaluation of Rs. 20/- per kg., leaf condiment 10 kg./ tree/ year which has evaluation of Rs. 10/- kg., and flower essence - 1 kg./tree/year which has evaluation worth of Rs. 2000/- kg.

#### 5. Phyto-geographical Distribution:

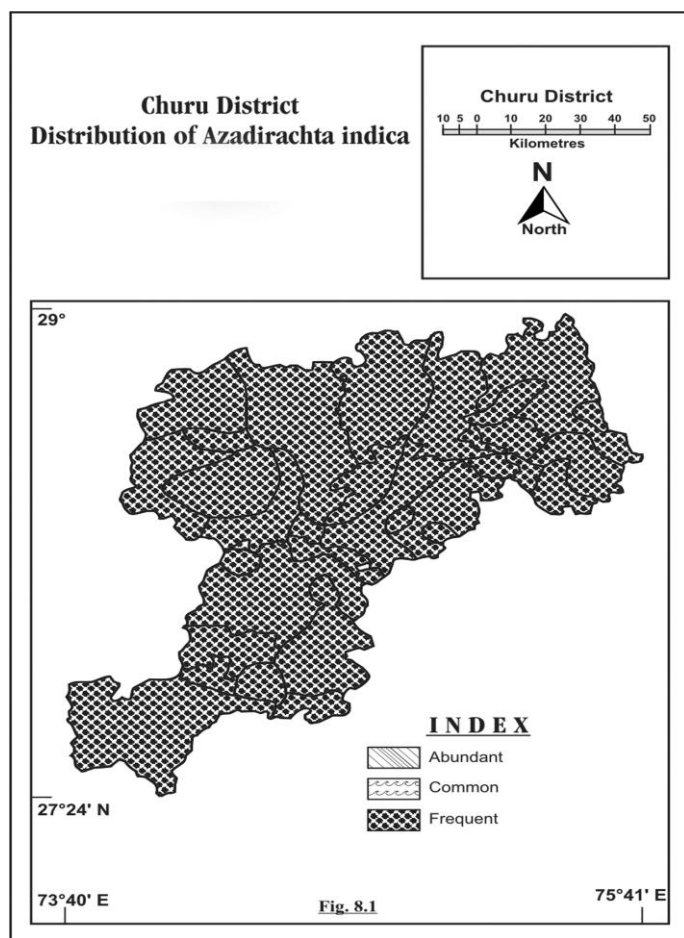
Although, neem tree is native to the Indian sub-continent, but it is planted and now much naturalised in tropical and sub-tropical countries.

It has 'poly-climax' distribution in nature, or in other words to say - the may be observed in more than one habitat i.e. sandy plains habitat, gravel formations, hilly habitat and also on aquatic habitat. It has no occurrence over the tops of sand dunes as well as on hills top surface.

The tree species shows uneven distribution in Churu district as shown in figure : 8.1. It has frequent pattern of phytogeographic distribution in sand dunes habitat where as it shows common occurrence in sandy plains habitat. In aquatic habitat it has no occurrence and it again shows frequent pattern of spatial distribution through out area under study. It is worthwhile to mention here that the neem trees have throughout scattered distribution in Churu district in different habitats but it is mostly observed at road side plantation which is an effort made by the department of forest, district. Churu, Rajasthan. The plantation of tree is preferred by the people and it is commonly observed with in human settlements of the area under study (Figure : 1). Rarely it may not be seen in any area of Churu district.

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