



## PLANTS USED IN TRADITIONAL HUT AND SHELTER CONSTRUCTION BY TRIBALS OF EASTERN RAJASTHAN, INDIA

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This paper deals with the use of plants by tribal and traditional communities in their traditional hut and shelter construction that are easy to make and biodegradable. These are primitive durable, well built dwellings, constructed by various plant parts and essential protective devices. Tribal have incessant relationship with precious forest commodity. Traditional buildings are self built by their owner or built by members of a community. The data were collected by interviews, observations and participation. In the course of the survey of the useful plants, 44 species belonging to 24 families have been documented which are being used by the natives of the study area for construction their hut and hamlet. Little work has been done regarding natural huts and shelter so there exists great scope for exploration in this region.

Key words – Construction, Dwellings, Hut, Shelter, Tribal, , Traditional

### Introduction

Rajasthan is the largest state of India, has an area of 3,42,239 sq kilometres. Rajasthan covers the territory which has a very mature topography, developed during the thousands of years of denudation and erosion processes.

Physiographical, it is a land of lofty hills and shifting sand -dunes, of scorching heat and freezing cold, of fertile plains, rugged ravines and dense forests<sup>1</sup>.

In numerous pockets within some inaccessible or less accessible forests, hills, deserts and other habitats, man still lives in the primitive style, in seclusion from modern society, upholding and loving the ancient traditions of ancestors. He still depends largely on nature for essential requirements and a close relationship exists between them.

Studies on general ethno-botany, plants in hut construction and material culture carried out by different workers.<sup>2-15</sup>

### Study Area

The study area comprises the districts of Alwar, Bharatpur, Dholpur, Karauli and

Sawai Madhopur. The main tribe of study area is Meena while traditional communities are Gurjar, Mali, Kumhar, Chamar and Jogi. Meena represents 51.2% population of tribals in the state.

The general climatic condition of the area is dry, except a short duration of rainy season. December to February is cold season, March to June summer, July to September rainy season and October to November is autumn season.

The average annual rainfall of the study area is 686mm. The average maximum and minimum temperatures remain 41° and 25° respectively. The study area comprises of hill slopes, ridges, valleys, rocky plateau, cliffs gorges ravines as important physical features.

### Material and Methods

Regular surveys were carried in the study area during 2014- 2017. The huts and hamlets were visited which the tribal and traditional communities inhabit.

Generally two types of interviews were taken, firstly of individuals and secondly of groups. Among them female interviewers

were 43% while remaining 57% were male. Most of them were over 40 years and uneducated.

All the plants and their parts were collected and herbarium specimens were prepared, preserved and identified with help of Flora of Indian Desert<sup>16</sup>, Flora of Rajasthan<sup>17</sup> vol.1-3 and Flora of North-East Rajasthan<sup>18</sup> and BSI(Botanical Survey of India), Jodhpur. Specimens were collected and deposited in the herbaria of University of Rajasthan (RUBL), Jaipur.

### Hut Construction

Food, cloth and shelter are three basic needs of human being. Physical shelter provides protection as one the basic need of man.

Lord Ram, Sita (wife), Laxman (brother) constructed huts during their exile at Chitrkoot and Panchavati.

The tribal and traditional communities generally construct their huts in groups on small hillocks and plains. All the members of family alongwith relatives, friends and neighbours take part in hut construction. Locally available plants from nearby forests are used for construction of hut skeleton. The huts are invariably rectangular in shape and spacious or middle sized having sufficiently large doors and may have windows for ventilation. Walls of hut are made of mud or wooden logs with thatched roof. The huts have one or two rooms which are used for dining, living, sleeping, storing etc. Kitchen is built outward of hut. Broadly, a hut has the following parts: -

#### 1. Pillar

It is a tall upright piece of wood used as a support for hut. Four wooden pillars are placed vertically in four corners upto 6 ft. in height. Then two more pillars are planted vertically in the middle on either side of the breadth of hut. These are comparatively of more height than the first four pillars. The number of pillars increased to eight to built a larger hut.

#### 2. Beam

It is a long piece of wood usually supported at both ends bearing the weight of part of the hut. A long beam is placed horizontally on the top of two central poles. Two more

beams are then placed on the remaining four poles, such that the two beams are parallel to the central horizontal beam.



Fig. 1 - A common Hut

#### 3. Rafter

Rafters are parallel sloping beams that support a roof.

#### 4. Poles

They resemble rafters, but are of lesser diameter.

#### 5. Purins

It is a network of slender wooden poles, horizontally over the rafters and poles.

#### 6. Thatch

This is a covering of various grasses, straw or leaves on the roof, above 8 to 10cm. thickness to make the house impervious to cold and rain.

#### 7. Wall

Mud walls are raised on four sides, keeping a door in one of the side walls.

#### 8. Plank

It is a long narrow flat piece of cut wood used in the hut e.g. for making doors.



Fig. 2 – Ceiling of Hut



Fig. 3- Wall of Hut

**Table 1** – List of plant species used in hut construction

S.No.	Name of Plant	Pillar	Beam	Rafter	Pole	Purlin	Thatch	Plank	Cooling screen	Local name of plant
1	<i>Acacia catechu</i> (L. f.) Willd.	✓		✓	✓					Khair
2	<i>Acacia leucophloea</i> (Roxb.) Willd	✓								Remja, Ronjda
3	<i>Acacia jacquemontii</i> Benth.	✓								Bavali
4	<i>Acacia nilotica</i> (L.)	✓	✓	✓				✓		Baboo, Bavaliyo
5	<i>Adhatoda zeylanica</i> Medic.					✓				Bansoda
6	<i>Aeglemarmelos</i> (L.)Corr.	✓	✓							Bel
7	<i>Ailanthus excelsa</i> Roxb.							✓		Ardu
8	<i>Alhagi maurorum</i> Medic.								✓	Jawasa
9	<i>Anogeissus pendula</i> Edgew.	✓	✓	✓	✓	✓				Dhok
10	<i>Azadirachta indica</i> A. Juss.	✓	✓	✓	✓			✓		Neem
11	<i>Balanites aegyptiaca</i> (L.) Del.		✓	✓				✓		Hingota
12	<i>Bauhinia racemosa</i> Lam.		✓							Kachnar
13	<i>Butea monosperma</i> (Lam.) Taub.						✓			Chheela
14	<i>Cassia fistula</i> L.	✓			✓					Barr
15	<i>Dalbergia sissoo</i> Roxb.	✓	✓	✓	✓					Sisoo
16	<i>Dendrocalamus strictus</i> (Roxb.) Nees				✓	✓	✓			Baans
17	<i>Desmostachya bipinnata</i> (L.) Stapf						✓			Daab
18	<i>Dichrostachys cinerea</i> (L.) Wt. & Am.	✓								Birbira
19	<i>Diospyros melanoxylon</i> Roxb.	✓						✓	✓	Tendu
20	<i>Ehretia laevis</i> Roxb.	✓	✓		✓					Tamoliya
21	<i>Eucalyptus</i> spp.	✓	✓	✓		✓				Safeda
22	<i>Ficus carica</i> L.		✓		✓					Anjir
23	<i>Ficus racemosa</i> L.	✓		✓						Gular
24	<i>Flacourtia indica</i> (Burm. f.) Merr.	✓	✓	✓						Kankher
25	<i>Holoptelia integrifolia</i> (Roxb.) Planch.	✓	✓	✓	✓					Churel
26	<i>Indigofera linifolia</i> (L. f.) Retz.						✓			Jhunghan ghas
27	<i>Leptadenia pyrotechnica</i> (Forsk.) Decne.					✓	✓			Kheep
28	<i>Madhuca indica</i> J. F. Gmelin	✓	✓	✓				✓	✓	Mahuva
29	<i>Mangifera indica</i> L.	✓						✓	✓	Aam
30	<i>Maytenus emarginatus</i> ( Willd.) Ding Hou	✓	✓	✓	✓					Gwank
31	<i>Pennisetum americanum</i> (L.) Leeke						✓			Bajra
2	<i>Phyllanthus emblica</i> L.			✓						Amra
33	<i>Phoenix sylvestris</i> (L.) Roxb.		✓							Khajur
34	<i>Prosopis cineraria</i> (L.) Druce	✓	✓	✓	✓					Chhonkar
35	<i>Ricinus communis</i> L.				✓					Arandi
36	<i>Saccharum bengalense</i> Retz.					✓	✓			Munj
37	<i>Saccharum spontaneum</i> L.					✓	✓			Kaans

38	<i>Tamarindus indica</i> L.	✓								Imli
39	<i>Typha angustata</i> Bory & Chaub						✓			Patera
40	<i>Vetiveria zizanioides</i> (L.) Nash								✓	Khas
41	<i>Wrightia tinctoria</i> (Roxb.) R. Br.	✓								Dhudha Khinni
42	<i>Zea mays</i> L.						✓			Makka
43	<i>Ziziphus mauritiana</i> Lam.	✓	✓	✓	✓					Pemli ber
44	<i>Ziziphus nummularia</i> (Burm. f.) Wight & Arn.								✓	Jhaad

### 9. Door Frame

For installing a regular gate, a framework of woods is made in the wall.

### 10. Lintel

It is a piece of wood in a rectangular fashion over the door or window, forming part of the frame.

### 11. Cooling Screen

The screens of various grasses and herbs, locally called as *Tattie*, are used in huts for cooling during summer.

### 12. Gates

Generally, planks of various plants are used to construct doors for the gate. A fencing made of various live plants or dead ones or their wood is generally seen with an opening, which forms the gate. Some of the plants constituting fencing are *Euphorbia neriifolia*, *Ziziphus nummularia*, *Prosopis juliflora*, *Dendrocalamus strictus*, *Bauhinia racemosa*, *Capparis decidua* etc.

### 13. Cattle Shed

The construction material of cattle shed and top (storage for fodder and cow dung cakes) are similar to resident hut.

### Results and Discussion

44 plant species belonging to 24 families are used by tribal and traditional folks in their huts and hamlets.

Plants like *Acacia nilotica*, *Anogeissus pendula*, *Azadirachta indica*, *Dendrocalamus strictus*, *Holoptelia integrifolia* and *Prosopis cineraria* are widely used. The wood of *Phoenix sylvestris* is preferred for beam. A temporary shelter is built in the agricultural field to keep watch.

The wood of *Anogeissus pendula* is favourite due to its durability. *Saccharum bengalense* is widely used for thatching

purpose. The twigs of *Ziziphus nummularia* stored in open for a year are used to prepare cooling screen in forthcoming summers. Traditional construction of huts and shelters is still in practice. Choice of plants for construction depends on the quality and availability of species.

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