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## Socio-economic and livelihood pattern of ethnic group Baiga in Baiga-chak of Dindori district of Madhya Pradesh

**Geeta Singh, MK Dubey, SRK Singh and Minakshi Meshram**

### Abstract

The Baiga are an ethnic group found in central India primarily in the state of Madhya Pradesh and in smaller numbers in the surrounding states of U.P., C.G. and Jharkhand. The larger number of Baigas found in Baiga-chak in Dindori and Balaghat district of Madhya Pradesh. The presence studies on socio-economic and livelihood pattern of ethnic group Baiga tribe in Baiga-chak belt of Dindori district of Madhya Pradesh state. Which has predominance of forest with large number of different vegetation. In India about 10 to 12 million hectare area representing 14 to 16% of the total forest area of the country. MP state has broader diversity among ethnic groups the present study has been conducted in tribal pocket of Dindori district there is predominance of Baiga and Gond tribe. The Baiga tribe community living in MP state has immense knowledge about plant wealth. This knowledge has been documented in the present study. The information was collected from personal interview schedule, PRA and group discussion from the Baiga tribe.

Baigas have been living in forest fringes in chhadda, Bajag forest for last several hundreds of years and are dependent on forest flora for their social and livelihood needs. During the study on socio-economic pattern of Baiga tribe various herbs, shrubs and trees have been recorded being used for edible purpose, building construction and thatching purpose, extraction of vegetable dye used in colouring of clothes, gum collection for edible purpose and also used in ceramics industry and various plants documented as used for medicinal purposes, making country liquor, extraction of tannin making of agricultural implements.

**Keywords:** Baiga, tribe, livelihood, dependence, forest, pattern, community

### Introduction

India is a country which has tremendous diversity among ethnic communities flora and fauna stretching from temperate Himalayas in the North of our country to the Nilgiris and tropical rain forests in the western ghats in the south, from wet rain forests in the East to Thar desert in the West. In our country, there are about 550 tribal communities belonging to 227 ethnic group (Maheshwari, 1994) <sup>[15]</sup> derived from six racial stocks named as -Negrito, Proto-Australoid, Mongoloid, Mediterranean, Western Braehy Cephals and Nodic. These tribes comprise nearly 22 per cent of the worlds indigenous people and 7.7 per cent of India's population, covering about the five thousand villages out of five lakhs villages in India. Some of these tribes in India are the most primitive societies in the world depending completely on the forest for their survival and they live in complete harmony with nature. Vidhyarti (1972) <sup>[23]</sup> conducted studies on Baigas of central India and found that they are engaged in hill cultivation in the northern belt. Baigas first slash the trees and bushes and later burn trees, bushes and then spreads the seeds by broadcasting them on the ashes of field for cultivating agricultural crop. Rural household world-wide engaged in a variety of non-farm activity to generate income (Meludu *et al.*, 1999: Lanjouw and Lanjouw, 2001 and World bank, 2003) <sup>[13]</sup>. The contribution of non -farm income to rural income shares cannot be under estimated. For Latin America and Caribbean, estimates of rural non-farm income shares for rural households were 22 percent in Honduras, 59 percent in Costa Rica and 68 percent in Haiti (Reardon, 1997).

Traditionally, a large proportion of rural youth obtain their livelihood either through supporting their family enterprises or working on their own account in agriculture, trade-related enterprises and craft industries, and in many cases contribute to family income or support themselves entirely while still in full-time education (Porter *et al.* 2007). Contrary to the prototype image of either depending purely on agricultural or non-agricultural activities, rural youth rely on many activities and income sources.

They are engaged in a diverse range of productive activities both agricultural and non-agricultural which make up their livelihood strategies (Bennell, 2010) [6] and their involvement in these activities describes their livelihood pattern. These productive activities bring streams of income to rural youth who engage in it and thus constitutes their income generating activities. Ahmed *et al.* (2007) [1]; Al-amin, (2008) [3] and Ahmed (2009) [2] state that living standard of rural poor will only be uplifted when they receive income from economic activities. Undoubtedly, the plight of rural youth would be alleviated through their involvement of income generating activities. The Oxford Dictionary defines Livelihood as “means of securing necessities of life. In other words- Livelihoods provide complete, comprehensive and complex social dynamics of those series of diverse and multiple activities that the poor households and their earning members get engaged in for keeping up their survival and sustain themselves in the long-term, through subsistence, additional income and employment.

There are about 370 million aboriginal people in 70 countries around the world. India has 84.33 million indigenous people (Scheduled Tribes) Which account to 22.79 per cent of the total indigenous people of the world. There are in all, 698 indigenous groups in India of these 75 tribes have been identified as endangered by GOI. Baiga community is also one of the endangered and most vulnerable tribal group of India. Indian constitution assigns special status to the Schedule Tribes (STs) Traditionally referred to as adivasi or tribals. STs constitute about 8 per cent of the Indian population. There are 57.3 per cent ST living in different parts of the country, these are different from the mainstream people of the state where they live. Baiga tribe is a primitive tribe found in central province of the country such as Madhya Pradesh, Uttar Pradesh Chhattisgarh and Jharkhand. The largest number of Baiga are found in Baiga-chak in Mandla, Dindori and Balaghat Districts of M.P. Baiga are connected to Indo- Aryan Dravidian tribes who have unique socio-economic status and life style. The major part of Baiga earning is spent on food and clothing. In Baiga community, the family is small, but the kinship structure is quite strong. They follow strict marriage rules, such as incest is a taboo, no marriage with outsider is permitted, and monogamy is the general rule. The Baigas have expertise in traditional medicines and the priest have their special importance. Baiga lived in forest and carry out shifting, slash and burn cultivation of thousands of years without any influence or completion from other Indian residents. It is believed that the two words Baiga and Bewar are inextricably linked until 1953 these two words were used such as Baigas are engaged in Bewar. The Baiga do not plow the land, because they say it would be a sin to scratch the breast of their Mother, and they could never ask their Mother to produce food from the same patch of earth time and time again: she would have become weakened. The Baiga tribes practice shifting cultivation, called 'bewar' or 'dahiya'. The kodo millet, a primary food of the Baiga. The present paper mainly focus on analyze the knowledge and use level of tribals in context of forest flora and fauna and associated their livelihood.

### Objectives

1. To analyze the knowledge and use level of tribal in context of forest plants.
2. To find out the socio-economic livelihood pattern of Baiga tribe in context of use of forest plants

### Research Methodology

Out of seven blocks of Dindori district three blocks namely Samnapur, Bajag and Karanjia was selected for study purpose because maximum Baigas residing in these blocks. Out of these three blocks 26 villages identified for study those comes under Baiga chak belt. From each selected village seven percent of total household selected for survey thus the sample was 250 respondents.

**Method for data collection:** The information was collected from personal interview schedule and group discussion from the Baiga tribe.

### Results and Discussion

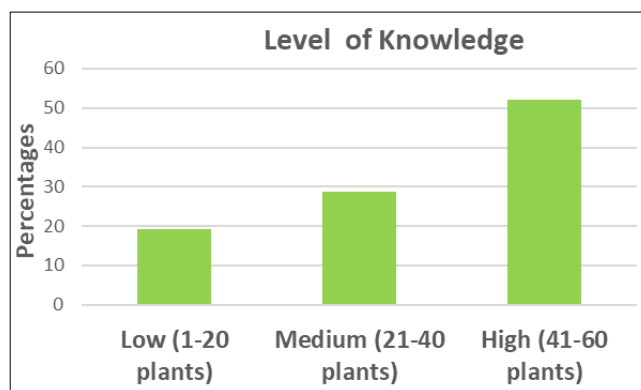
Baigas are forest dwellers and hunters who collect food from forest and are dependent on forests for their subsistence and livelihood. They prefer hunting and fishing in forests. However, with the passage of time and three-fold increase in their population and due to limited forest resources. They were persuaded for cultivation of agricultural crops and horticultural plants.

### Knowledge level about forest plants

Knowledge level about plants of respondents is presented in table 1

**Table 1:** Categorization of respondents based on their knowledge level about forest plants

Categories	Frequencies	Percentages
Low (1-20 plants)	48	19.20
Medium (21-40 plants)	72	28.80
High (41-60 plants)	130	52.00
Total	250	100.00



**Fig 1:** Showing the percentage of respondents according to their level of knowledge of plants

Majority (52%) of the respondents had high knowledge about forest plants, 28.80 per cent had medium knowledge and 19.20 per cent respondents had low knowledge about forest plants. (Table 1 & Fig.1) It shows that higher percentage of the respondents had knowledge of 41 to 60 forest plants. Similar findings reported by Tawade *et al.* (1998) [20] that 85 to 100 per cent of the respondents were aware about the seasonal as well as perennial medicinal plant species. Mankar *et al.* (1996) [12] found that majority (68.50%) of the respondents had medium knowledge level, while 18 per cent of the respondents had low knowledge level and 13.50 per cent of the respondents had high knowledge level about the medicinal plants.

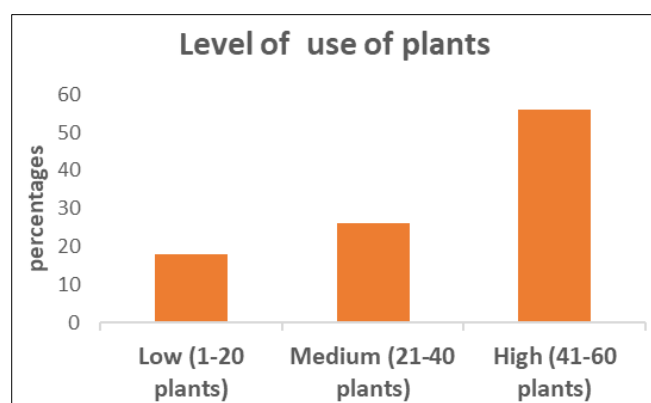
Thakur G. (2001) <sup>[21]</sup> found that majority of respondents (43.33) per cent had high level of knowledge about medicinal plants followed by medium (30.00 per cent) and low level (26.67 per cent) of knowledge about medicinal plants.

### Level of use of forest plants

Level of use of forest plants by the respondents is presented in table 2 and figure 1

**Table 2:** Categorization of respondents based on their level of use of forest plants

Categories	Frequencies	Percentages
Low (1-20 plants)	45	18.00
Medium (21-40 plants)	65	26.00
High (41-60 plants)	140	56.00
Total	250	100.00



**Fig 2:** Showing the percentage of respondents according to level of use of plants

In table 2 depicts that majority (56%) of the respondents were using 41-60 forest plants whereas 26.00 per cent were using 21-40 plants and remaining 18.00 per cent respondents were using 1-20 plants for different purposes. Similar finding reported by Saxena (1988) enumerated 88 folk uses in his ethno- botanical studies of plant species found in the State of

Madhya Pradesh.

Thakur G. (2001) <sup>[21]</sup> found that majority of respondents (43.33) per cent had high level of knowledge about medicinal plants followed by medium (30.00 per cent) and low level (26.67 per cent) of knowledge about medicinal plants.

### The various socio- economic livelihood pattern of Baiga tribe in Dindori District are described below:

1. Collection of wild plants, roots, tubers, leaves, flowers and fruits for edible purpose.
2. Hunting and fishing for livelihood needs.
3. Collection of forest products for preparation of items such as baskets, mats, brooms, ropes, leaf-plates and their sale for income generation.
4. Plants used in building and thatching of houses for living purpose.
5. Collection of gum, tannin and resins and seeds from plants and trees and their sale in weekly market to private traders for income generation.
6. Collection of plant species for extraction of vegetable dyes and colouring of clothes.
7. Collection of plant species such as root, bark, flowers for making country liquor for consumption and sale in local market.
8. Collection of plants for making agricultural implements.
9. Plant species used for medicinal purpose
10. Collection of minor forest produce from forest area and their sale for income generation.

### Collection of wild plants, roots, tubers, fruits for edible purpose

Baigas collect rhizomes, tubers, leaves tender shoots, petiole, seeds and fruits of plants growing in the forest area as presented in table 1. However, with the passage of time and increase in their population and due to limited forest they are also turning to cultivation of Paddy, Maize, Arhar and Mustard in their agricultural fields and plantation of Banana Mango, Aonla and custard apples.

**Table 3:** Plants used for edible purposes.

S. No.	Local Name	Botanical Name	Family	Edible part	Economical uses
1	Munga	<i>Moringa oleifera</i>	Morangeseae	Leaves, flowers and fruits	Leaves, flowers, fruits all are used for edible purpose
2	Sitaphal	<i>Anona squamosa</i>	Annonaceae	Fruits	Ripe fruits are used for edible
3	Mango	<i>Mangifera indica</i>	Anacardiaceae	Fruits	Raw and ripen fruits both for edible purpose
4	Satawar	<i>Asparagus racemosus</i>	Liliaceae	Rhizomes	Rhizomes boiled and used as vegetable
5	Khesari	<i>Lathyrus sativus</i>	Casealpiniaceae	Seed	Boiled seeds used as pulse
6	Pasara/Paddy	<i>Oryza sativa</i>	Poaceae	Seed	Seeds boiled and consumed as cereal
7	Arhar	<i>Cajanus cajan</i>	Fabaceae	Seed	Seeds are boiled and consumed as pulse
8	Makka	<i>Zea maize</i>	Poaceae	Grains	Grains used as cereal and preparation of paze(Drink)
9	Bathua	<i>Chenopodium album</i>	Casealpiniaceae	Twigs & leaves	Leaves and twigs used as vegetable
10	Singara Linn.	<i>Bauhinia purpurea</i>	Casealpiniaceae	Flowers	Flowers cooked with ghee for edible purpose
11	Meral	<i>Cassia tora</i>	Casealpiniaceae	Fruits	Fruits cooked and used as vegetable
12	Dang Kanda	<i>Macaranga Pelate</i>	Euphorbiaceae	Tuber	Used as vegetable
13	Utaara	<i>Basella alba</i>	Basellaceae	Stem and leaves	Stem and leaves boiled with salt and consumed as curry
14	Naril	<i>Polygonum barbatum</i>	polygonaceae	Leaves & green twigs	Leaves & green twigs are used as vegetable.
15	Chironji	<i>Buchanania lanzan</i>	Anacardiaceae	Seeds	Used as dry fruit
16	Kaitha /wood apple	<i>Limonia acidissima</i>	Rutaceae	Fruits	Edibles as raw and ripen both
17	Bael/ Sarjan	<i>Aegle marmelos</i>	Rutaceae	Fruits	Edibles as raw and ripen both
18	Ratal Kanda	<i>Amorphophallus paeoniifolius</i>	Araceae	Tubers	Used as vegetable
19	Sarai/sal	<i>Shorea robusta</i>	Dipteroceae	Seeds	Seeds are eaten after roasting. Oil is extracted from seeds that are used for cooking and burning
20.	Bathua	<i>Chenopodium album</i>	Amarantheceae	Leaves & twigs	Used as vegetable

Similar finding reported by Patta (1988) food consumption pattern of Baigas settled in Baiga chak. The community collects edible roots, bulbes, rhizomes and fruits from forest and consumes them for food purposes.

Maheshwari (1984) conducted ethno- botanical studies in Baiga pockets of Mandla district. He found that these pockets are of immense wealth for ethno- botanical studies and Baiga are dependent for their livelihood on forest flora. He further found (1996) that plant species collected and used by Baiga tribe are sources of food, fibre, medicine and income generation for their livelihood needs.

Harsh, *et al.* (1996) <sup>[10]</sup> reported that information is given on edible and medicinal fungi collected by families. Rai and Nath (2000) <sup>[18]</sup> found in their case study that Baiga are excellent wood cutter minor forest produce from forest locally near-by their village in buffer zone of Kanha

#### Hunting and fishing for livelihood needs

Hunting is one of the traditional occupation of Baiga tribe. Since these people have been exclusively dependent of forests, hunting used to be an important activity for their livelihood needs and playing an important role in their

economy. Fishing is another source of livelihood in rainy season, but it does not contribute significantly to their economic growth. Men and women are equally interested in fishing in rainy season in rivers and streams. Fishing is done in ponds, water streams and rivers like Narmada, Son, Kharmar, Budner and Sarajhir flowing across the Chhada forest Dindori.

#### Collection of forest products for preparation of items such as basket, mats, brooms, ropes, leaf-plates and their sale for income generation

Baigas are expert in use of axe and in cutting of bamboos, canes and wood etc. Both men and women are expert in making baskets from bamboos and canes. They make baskets for domestic use as well as for sale in weekly markets. Leaf plates and cups are prepared from leaves of palas.

Phool bahari grass and leaves of chhind are used to make brooms. Leaves of safed kikar which is a rich source of strong fibre, is used for making ropes. Stems of ban-methi and mahul are used to make mats. Income is generated by sale of these items in weekly market. The plant species used for these items are presented in table.

**Table 4:** Plant species used for making brooms, mats, ropes, leaf cup plates and baskets.

S. No.	Local Name	Botanical Name	Family	Plant part used	Economical uses
1	Bans	<i>Dendrocalamus strictus</i> (Roxb.)	Poaceae	Stem	Stem for preparation of baskets, brooms & mats.
2	Chhind	<i>Phoenix acaulis</i> (Roxb)	Arecaceae	Leaves	Leaves used for making brooms.
3	Ban methi	<i>Sida acuta</i> Burm.f.	Malvaceae	Stem	Mats are weaved from stem fibre.
4	Mahul	<i>Bauhinia vahlii</i>	Caesalpiniaceae	Stem	Mats and threads prepared from stem
5	Palas	<i>Butea monosperma</i>	Fabaceae	Leaves	Leaves used for making cup plates etc
6	Safed kikar	<i>Agave vera-cruz</i>	Agavaceae	Leaves	Leaves are source of strong fibre for making ropes.
7	Ramfool/Lantana	<i>Lantana camara</i>	Verbenaceae	Stem	Stem used for making, broom, furniture, other item and tree guard
8.	Khajoor	<i>Phoenix sylvestris</i>	Arecaceae	Leaves	Leaves used for making baskets.

#### 4. Plants used in building and thatching of houses for living purpose

Baigas live in kacchha mud house with beams made of *Adina*

*cordifolia* chaidu. The culms of *Dendrocalamus strictus* (Bans) is used as central pole of the hut timber stem of *Shorea robusta* (Sal) is used for construction of door at windows.

**Table 5:** Plant species used by Baigas for building and thatching houses.

S. No	Local Name	Botanical Name	Family	Plant part used	Economical uses
1	Singara	<i>Bauhinia purpurea</i>	Caesalpiniaceae	Leaves	Leaves used for thatching houses
2	Bans	<i>Dendrocalamus strictus</i> (Roxb.) <i>Bambusa</i> <i>Arundinacea</i> Wild	Poaceae	Canes (Stem) Canes (Stem)	Canes used for construction of houses as building material.
3	Sarai/Sal	<i>Shorea robusta</i>	Dipterocarpaceae	Leaves and stem wood	Sal leaves are used for thatching of houses. Wood is used for making poles, doors and windows.

#### 5. Collection of gum, tannin and resins and seeds from plants and trees and their sale in weekly market to private traders for income generation

The women-folk of the Baiga tribe collect gums and use them for various purposes. The gum collected from Babul tree is used for edible purpose, gum collected from bark and stem of Khair, Palas and Gugul is used for medicinal purpose as remedial measure in snake bite and scorpion sting. The gum collected from bark of Bija -sal is applied to cure toothache,

fever and urinary discharge in women. The gum collected from various trees as presented in table is sold in weekly market as well as to traders for income generation.

Brijjal *et al.* (1985) enumerated folk- uses of lichens in ethno- botanical studies for Baigas, Bhils, Gonds and Murias tribals. Jain (1988) <sup>[11]</sup> conducted sociological and ethno- botanical studies on tribal clans of central India. He further emphasized that plant species being utilised by tribals are also being conserved by them.



**Table 6:** Plant species used by Baigas for collection of gum.

S. No.	Local Name	Botanical Name	Family	Plant part used	Economical uses
1	Palas	<i>Butea monosperma</i>	Fabaceae	Bark	Brak gum is used for medicinal purpose
2	Neem	<i>Azadirachta indica</i>	Meliaceae	Bark	Gum is used as adhesive
3	Dhawa	<i>Anogeissus latifolia</i>	combretaceae	Bark	Gum is used in paper industry and calico painting
4	Sal	<i>Shorea robusta</i>	Dipterocarpaceae	Bark	Gum is used in Ceramasis
5	Khair	<i>Acacia catechu</i>	Mimosaceae	Bark, Stem	Gum is used for manufacture of varnish and medicines.
6	Babul	<i>Acacia nilotica</i>	Mimosaceae	Bark	Deshi gum used for edible purpose

Tiwari (1997) found predominance of Baiga tribe in the sal forest areas in Mandla, Dindori, Balaghat and Shahdol district

and in teak forest areas of Kawardha, Betul, Seoni Rajnandgaon and Chindwara districts.

**Table 7:** Plant species used by Baigas for extraction of tannin.

S. No.	Local Name	Botanical Name	Family	Plant part used	Economical uses
1	Khair	<i>Acacia catechu</i>	Mimosaceae	Heart wood	Heart wood yields 50-60 % tannin
2	Amaltas	<i>Cassia fistula</i>	Caesalpinaceae	Bark	Bark contains 10-12 % tannin
3	Aonla	<i>Emblica officinalis</i>	Euphorbiaceae	Fruits, Twigs	Fruits yield 25-28% tannin Twigs yields 18-20 % tannin
4	Bahera	<i>Terminalia bellirica</i>	Combretaceae	Fruits	Fruits yield 20-22% tannin
5	Harra	<i>Terminalia chebula</i>	Combretaceae	Fruits	Fruits yield 30-35 % tannin
6	Dhaura	<i>Anogeissus latifolia</i>	Mimosaceae	Heart wood	Heart wood yields 50-60 % tannin

### 6. Collection of plant species for extraction of vegetable dyes and colouring of clothes.

Tribal collect leaves of *Ampelocissus latifolia* (Jangali angur)

flowers of *Butea monosperma* (Palas), seeds of *Bixa Orellana* (latkan) and wood of *Acacia catechu*. The details are presented in table-8

**Table 8:** Plant species used by Baigas for colouring clothes

S. No.	Local Name	Botanical Name	Family	Plant part used	Economical uses
1	Khair	<i>Acacia catechu</i>	Mimosaceae	Wood	Cutch dye is extracted from wood for colouring cloths
2	Palas	<i>Butea monosperma</i>	Fabaceae	Flowers	Saffron coloured dye obtained by boiling flowers
3	Jangali Angur	<i>Ampelocissus latifolia</i>	Vitaceae	Leaves	Green dye obtained by boiling leaves
4	Latken	<i>Bixa orellana</i>	Bixaceae	Seed	Seed coat is used to extract dye for colouring woolen clothes.

### 7. Collection of plant species such as root, bark, flowers for making country liquor for consumption and sale in local market

Baigas are mostly a homogeneous clan and they maintain homogeneity. Generally, the marriage system adopted is Pathul and Gandharva vivah. The marriage ceremony is associated

with feast and drinks prepared from forest flora followed by folk dance. The liquor is also served during festivals, when sacrifice is made by tribals. Generally, flowers of mahua and khajoor are used for preparation of country liquor is presented in table 9.

**Table 9:** Plant species used by Baigas for making country liquor.

S. No.	Local Name	Botanical Name	Family	Plant part used	Economical uses
1	Mahua	<i>Madhuca latifolia</i>	Sapotaceae	Flowers (Corolla)	Corolla is used to make country liquor
2	Ber	<i>Zizyphus mauritiana</i>	Rhamnaceae	Root bark	Root bark is used to extract liquor
3	Khajoor	<i>Phoenix acaulis</i>	Arecaceae	Fruits	Fruit is used to make country liquor

### 8. Collection of plants for making agricultural implements

The woman folk of Baiga tribe collect wood of *Bombax ceiba* (semal) and *Shorea robusta* (sal) and stem of *Cassia fistula*

(Amaltas) Menfolk make yokes and plough from the wood and stem of these plants as detailed in table 8

**Table 10:** Plant species used by Baigas for making agricultural implements

S. No.	Local Name	Botanical Name	Family	Plant part used	Remarks
1	Semal	<i>Bombax ceiba</i>	Bombaceae	Wood	Wood used for making plough
2	Amaltas	<i>Cassia fistula</i>	Caesalpinaceae	Stem	Stem used for making plough
3	Sarai	<i>Shorea robusta</i>	Dipterocarpaceae	Wood	Wood used for making plough
4	Sagwan	<i>Tectona grandis</i>	Lamiaceae	Wood	Wood used for making furniture

### 9. Plant species used by Baigas for medicinal purpose

Due to wide variability in edaphic and climatic conditions Madhya Pradesh state is a rich source of medicinal plants having numerous species of great importance. More than 1100 medicinal plants are used in folk and traditional health

remedies.

Pandey *et al.* (1998) <sup>[16]</sup> reported that in Gonda Balrampur Bahraich and shravasti district of the tribal Belt area as in Uttar Pradesh, India 19 weeda are used by tribal people in traditional medicine.

**Table 11:** Plant species used by Baigas for medicinal purpose

S. No.	Local Name	Botanical Name	Family	Plant part used	Purpose
1	Amla	<i>Emblica officinalis</i>	Euphorbiaceae	Fruit	Constipation
2	Khair	<i>Acacia catechu</i>	Mimosaceae	Bark	Mouth diseases
3	Babool	<i>Acacia arabica</i>	Mimosaceae	Bark and branches	Pyria
4	Sarai/ Sal	<i>Shorea robusta</i>	Dipterocarpaceae	Seeds & Resin	Resin is used as an astringent and is given in diarrhea and dysentery.
5	Dube grass	<i>Cynodon dactylon</i>	Poaceae	Whole plant	Dysentery
6	Bael	<i>Aegle marmelos</i>	Rutaceae	Root & fruit	Dysentery
7	Tendu	<i>Diospyros melanoxylon</i>	Ebenaceae	Stem bark branches	Pyria
8	Jamun	<i>Syzygium cumini</i>	Myrtaceae	Fruits	Diabetes
9	Arjun	<i>Terminalia arjuna</i>	Combretaceae	Bark and branches	Mouth disease
10	Hadjod	<i>Cissus aundrang</i>	Vitaceae	Leaves	Joint pain
11	Palas	<i>Butea monosperma</i>	Fabaceae	Bark	Dyentary
12	Bargad	<i>Ficus bengalensis</i>	Mulberry	Young leaves	Pyria
13	Imli	<i>Tamarindus indica</i>	Fabaceae	Fruit	Piles, Dysentery
14	Tulsi	<i>Ocimum sanctum</i>	Lamiaceae	Leaves	Malaria
15	Bach	<i>Acorus calamus</i>	Acoraceae	Root powder	Urine disorder
16	Pudina	<i>Mentha species</i>	Lamiaceae	Leaves	Indigestion
17	Suran	<i>Amorphophallus species</i>	Araceae	Tuber	Indigestion
18	Harra	<i>Terminalia chebula</i>	Combretaceae	Fruits and bark	Stomachache
19	Baheda	<i>Terminalia bellirica</i>	Combretaceae	Fruit	Constipation
20	Neem	<i>Azadirachta indica</i>	Meliaceae	Bark and branches	Malaria, fever Teeth infection
21	Peepal	<i>Ficus religiosa</i>	Mulberry	Root powder	Cough
22	Bans	<i>Dendrocalamus strictus</i>	Poaceae	Root	Leprosy
23	Mango	<i>Mangifera indica</i>	Anacardiaceae	Root	Stone
24	Dhatura	<i>Datura metel</i>	Solanaceae	Leaves	Swelling
25	Eclipta alba	<i>Bhringraj</i>	Asteraceae	Leaves	Swelling

Diwanji *et al.* (1999) <sup>[7]</sup> revealed that 91 plant species used by the tribals of Western Madhya Pradesh for the treatment of rheumatism.

Mankar *et al.* (1996) <sup>[12]</sup> found that majority (68.50%) of the respondents had medium knowledge level while 18 per cent of the respondents had low knowledge level and 13.50 per cent of the respondents had high knowledge level about the medicinal plants.

Tawade *et al.* (1998) <sup>[20]</sup> revealed that 85 to 100 per cent of the respondents were aware about the seasonal as well as perennial medicinal plants species.

Maheshwari (1987) reported that the "wonder drugs" have been discovered from wild plants and rich ethnopharmacognosy are being recognised and used by various native medicines in India.

Badiger *et al.* (1991) <sup>[4]</sup> reported that most of the villagers are dependent on forest for medicinal plants and flesh foods.

Maheshwari, J.K. (1994) <sup>[15]</sup> reported that over 550 species of

plants are used in traditional medicine.

#### 10. Collection of minor forest produce from forest area and their sale for income generation

Due to three fold increase in population the last one and a half decade and due to limited and restricted forest resources, these tribals who were only collecting resins, gum harra, baheda, anola bamboo, chiraunji, safed musli, jamun, saja and bija, flowers of mahul and mahua for their sale and income generation, have also started cultivation of agriculture crops and planting of horticulture plants. Baiga are excellent wood cutters and seasonally also works as labourers in silviculture operations and logging units of forest department for meeting their livelihood needs.

The tribal collects minor forest produce such as honey, chironji, harra, bahera from forest and sell them to private traders in weekly market. Period of minor forest products collection are presented in table 12

**Table 12:** Collection period of minor forest produce from forest

S. No.	Name of MFP collected	Time of collection
1	Harra, Bahera, Balharra	January to April
2	Tendu leaves	April to June
3	Mahul flowers	March to April
4	Chiraunji	May to June
5	Honey	May to June, October to November
6	Kullu gum	November to March
7	Mahul leaves & bark	July to September
8	Amboo twigs & sal resins	October to November

#### Conclusion

Sal is an important and multipurpose tree of tropical forest. During the field survey work it was observed growing in those soils which are having greater porosity, better drainage. The species grows well on elevated ground at rivers streams on the ground. Better soil moisture results in better growth of sal. Sal Timber is highly durable and mostly used in making central beams in building, houses and agricultural implements. Sal wood is also used by Baigas as fuel wood.

Oil extracted is used in lightening of lamps and is also used in blending with other oils in vanaspati industry. The de-oiled cake of sal is used as cattle feed and poultry feed.

A large number of tribal communities resides in sal forest throughout sal growing belt. Baiga tribe is pre dominant of Dindori district. They prefer hunting, fishing, collection of rhizomes, roots, tubers, seeds and fruits of edible purpose and harra, bahera, aonla, honey, gum, resins to sell in market for income generation. Plants are collected for catching of

building of houses extraction of vegetable die for colouring, making furniture from bamboos and cans leaf cups plates brooms maths baskets from leaves and stems of plant and from sal resin for making incense sticks.

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