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## Ethno-medicinal plants used by the Baiga tribe of Maikal hills of Central India

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### Abstract

The Baiga tribes considered as Particularly Vulnerable Tribal Groups (PVTGs), reside in the Maikal hills of central India and are rich in their culture and traditional knowledge. The Vaidya and Guniya are two types of health healers found among the Baiga tribal community. It is found that they have good skills in identifying the mediational plants. The present paper aims to explore the traditional healing system, and tribal indigenous knowledge system and identifies the ethno-medicine used by the Baiga tribes of the Maikal hills of central India. The three-pronged research methodology was adopted in the present study. (i) Desk review, (ii) FGDs, and (iii) personal interactions. Due to development intervention, many medicinal plants disappeared, and there is a need to document and encourage the new generation to continue medicinal practices. Their livelihood opportunities could be increased, and hidden treasury will be helpful to mainstream society for the protection of health care.

**Keywords:** Baiga tribes, Ethno medicine, Maikal hills, Traditional knowledge

### Introduction

India is a rich source of natural wealth, having a rich diversity of medicinal plants, so it is usually called as botanical garden of the world (Vedavathy *et al.*, 1997) <sup>[14]</sup>. It used to said that every plant is a medicinal plant, in India, more than 181,460 flowering plants are reported as medicinal plants (Pushpangadan, 1995) <sup>[11]</sup>. The ancient literature are also describing the uses and importance of medicinal plants. The Ramayana, Mahabharat, and other Vedic literature have many examples of the use of ethno-medicine. Nearly 70 percent of the world population is dependent on traditional medicines for primary healthcare (Bhosle, *et al.*, 2009) <sup>[3]</sup>. The impact of globalization and industrialization, the demand of ethno-medicine in market continues to increase. The Covid-19 pandemic realizes the importance of herbal medicine. The forest is the key source of herbal medicines, Madhya Pradesh has 9.38 % forest of total geography. The Maikal hill is spread over the eastern part of the state, it covers five districts, namely Anuppur, Dindori, Mandla, Shahdol, and Umariya district of the state. The Maikal hills connect the Vindhya and Satpura mountain ranges. The Maikal range has rich biodiversity having a conducive environment for plenty of flora and fauna. There is an Achanakmar biosphere reserve area covering the Amarkantak Forest range. This region is in the Maikal range, with a high concentration of the tribal population, mainly the Gond, Baiga, Pardhan, Panika, and Agariya communities. More than 80 percent of the tribal population fully or partially depend on ethnomedicine for healthcare. According to Singh (2018) <sup>[12]</sup> the ethno-medicine can be considered tribal medicine. The tribes follow their customary laws for treating themselves and others also.

### Baiga: The medicine man

The Baiga tribe is considered the Particularly Vulnerable Tribal Groups (PVTGs) community. They are mainly found in Madhya Pradesh and Chhattisgarh. The Maikal range has a high concentration of the Baiga tribal community. The Amarkantak hills (Annuppur) and the Baigachak (Dindori) have a high density of the Baiga tribal community. The Baiga community is the regular medicine practitioner for the neighboring tribal community. The word Baiga is derived from the Vaidya, which means 'medicine man' (Bhagabati *et al.* 2019) <sup>[12]</sup>. The Baiga community mainly resides in the dense forest area in a scattered manner.

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Along with the Baiga community, another forest dweller community is far away from the modern healthcare facility. The worldwide Covid-19 pandemic didn't affect the tribal community because of their isolated environment and strong immune system, resulting from traditional healthcare practices. The traditional knowledge of herbal medicine is orally transmitted from one generation to another in the Baiga community. These tribal communities used to worship Mother Nature and believe that no one can cure without the blessings Van dev and Van devi. Before using any medicinal plant, they used to tack permission which shows respect toward nature, this community practiced sustainable use of shrubs, herbs, and trees and is responsible toward the forest and environment.

### Methodology

The study was carried out among the Baiga tribal community in the Maikal hill range of M.P. The researcher adopts the qualitative approach for a better understanding of the subject. The descriptive study method was adopted for this paper. The primary and secondary data had collected through a personal interview, observation, focus group discussion, and content analysis. The researcher collected data through both participatory and non-participatory observation and through in-depth interviews. The information was gathered from three interior villages, namely Amarkantak, Kajridabra, and Bijapuri. The investigation discovered about 43 species of medicinal plants from 31 families to cure diseases like bone

disease, blood disease, gynecological disease, menstrual disease, skin disease, respiratory disease, eye disease, etc. The significant observation of this study found that these medicines are used for the welfare of their community members and never had any business approach. All the plants cited in the paper are used by the local tribal traditional healers. The secondary data was collected from books, journals, websites, etc.

### Discussion

The Baiga tribal community has practiced herbal medicine since its origin. According to the Baiga mythology of origin, the first man on the earth is Naga Baiga, and the first woman is Naga Baigin. They have knowledge of medicinal plants by birth, it's transmitted genetically. The Baiga community has two different healers first one is *Guniya* who heals through exorcism (*Jhad-phook* and Mantra) as well as ethno-medicine, another healer is *Vaidya* who only gives herbal medicine. It is commonly found in every Baiga *Vaidya* (traditional healer) that before taking any medicine, they used to get permission from the *Van Dev* and *Van Devi* (Mother Nature). They compulsory practice to prey the *Vanaspati* (Herbal) and *Dharti mata* (Mother earth) to cure the patient. The Maikal hills have a rich bio-diversity found significant flora and fauna. The local traditional healers are using these herbals for generations. The flowing medicine is commonly using by the Baiga community.

#### Herbal and medicinal plant products are used by the Baiga tribes.

Scientific name	Family	Local name	Local Uses
<i>Achyranthes aspera</i> L.	Amaranthaceae	Chirchita, Latjira	1. Roasted and powdered seeds are useful in asthma. 2. Brush of stem is useful in pyria. 3. Root paste with heeng is given to cows and oxen for bronchitis.
<i>Acorus calamus</i> L.	Araceae	Vach, Bach	1. Root gives relief to pyorrhea and halitosis. 2. Root powder is highly effective in bronchitis and asthma. 3. Leaf's pest is useful for black hair.
<i>Aegle marmelos</i> L.	Rutaceae	Bael	1. Ripe fruit pulp is giving relief in diarrhea and dysentery. 2. Its Sharbat (syrup) controls body heat.
<i>Aloe barbadensis</i> Mill.	Liliaceae	Ghritkumari	1. Leaf pest is very much effective in the burn. 2. Leaf pulps is effective in removing dark circle, pimples, and other skin disease. 3. Leaf pulps are recommended for digestion-related issues.
<i>Asparagus racemosus</i> Willd.	Asparagaceae	Shatavar/ jogilati	1. Root powder is useful for masculine power. 2. Root powder is also useful for arthritis.
<i>Cassia fistula</i> L.	Fabaceae	Amaltas	1. Seed powder is useful for skin rash, ringworm, itching, diabetes, and burning. 2. Stem bark has anti-oxidant quality used as an immunity booster. 3. Leaf is useful for joint pain, Arthritis pain, and back pain, etc.
<i>Chlorophytum borivilianum</i>	Asparagaceae	Safed Musali	1. Root powder is useful for increasing sex stamina, premature ejaculation, erectile dysfunction, impotence, nightfall, etc. 2. It is useful for bodybuilding, boosting immunity, UTI, and Arthritis.
<i>Cissus quadrangularis</i> L.	Vitaceae	Hadjod	1. The green stem juice is used for the boon joint. 2. It is useful for digestion, ulcer, in cramps, Gout ad piles.
<i>Citrullus colocynthis</i> L. Schrad.	Cucurbitaceae	Indrayan	1. Root powder is useful for kidney stones.
<i>Cordia macleodii</i>	Boraginaceae	Dahiman	1. Bark and leaf powder is used for BP control, people used to carry its stem during morning walks for BP control. 2. Leaf pest is used to fill the skin injury. 3. Bark juice is useful for cancer, snakebite, jaundice, etc. 4. This plant is recognized as the 'Sanjivani plant'

			among tribal communities.
<i>Curcuma aromatica Salisb</i>	Zingiberaceae	Van Haldi	11. 1. This is useful for joint pain, blood purification, swelling, and itching, etc.
<i>Dillenia pentagyna Roxb.</i>	Dilleniaceae	Karkat	1. Leaf juice is useful for the joint the cells and muscles cut. 2. Bark juice is useful for body pain. 3. Root juice is useful for bone disease.
<i>Nardostachys jatamansi DC.</i>	Caprifoliaceae	Jatashankari	1. Root pest is useful for hair fall and baldness. 2. It is useful for cough, heart disease, eye disease, and headache
<i>Eclipta prostrata Roxb.</i>	Asteraceae	Bhringraj	1. Leaf juice and powder are useful for black hair, immunity, liver, and jaundice. 2. Powder is useful for cough and vata disease, skin infection, digestion, constipation, and stomach problem.
<i>Ficus religiosa L.</i>	Moraceae	Peepal	1. Bark powder is useful for respiratory disease. 2. Leaf is used in gastric disease.
<i>Hedychium coronarium</i>	Zingiberaceae	Gulbakawali	1. Extract of flowers is highly effective for eye disease.
<i>Kalanchoe pinnata</i>	Crassulaceae	Patharchata Bhasmpatti	1. Leaf is used in indigestion and gastric disease. 2. Leaf pest is also useful in kidney stones.
<i>Limonia acidissima</i>	Rutaceae	Kaitha/ kavit	1. It is useful for treating eye disease, ear pain, throat disease, and kid's abdominal pain. 2. Fruit is useful for Asthma, diabetes, skin disease, and piles.
<i>Sterculia urens Roxb.</i>	<u>Malvaceae</u>	Kullu	1. Gum is useful for cancer, heart disease 2. It is cool and nutritious so it is useful for the heat.
<i>Litsea glutinosa</i>	<u>Lauraceae</u>	Maida	1. Bark is useful for dysentery,
<i>Bacopa monnieri</i>	Plantaginaceae	Bramhi	1. Leaf powder is used for the brain and memory. 2. It is also used as immunity booster.
<i>Mangifera indica L.</i>	Anacardiaceae	Aam	1. Bark is useful for jaundice. 2. Mango juice is for digestion and a healthy stomach.
<i>Nyctanthes arbortristis L.</i>	Oleaceae	Harsangari	1. The leaf pest is useful for sciatica disease. 2. It's useful for controlling nerve pain.
<i>Oxalis corniculata</i>	Oxalidaceae	Changeri	1. Leaf pest is used for fever, dysentery, and skin disease. 2. Flowers are useful for vaginal disease. 3. Its leaves is also used as germicide
<i>Phyllanthus emblica L.</i>	Phyllanthaceae	Amla	1. Amla is one of the key components of Triphala powder which is useful for digestion and immunity. 2. Amla juice is useful for eye vision, hair, skin, and blood purification.
<i>Persicaria hydropiper L.</i>	Polygonaceae	Gondila	1. Stem and root powder is used as anti-poison component. 2. In case of any poison insect bite it is also useful.
<i>Psidium guajava L.</i>	Myrtaceae	Bihi/ Amrud	1. Fresh leaf is useful for mouth ulcer. 2. Stem brush is useful for tooth pain. 3. Fruit is useful for weight loss, constipation, digestion, piles, etc.
<i>Sapindus mukorossi Gaertn.</i>	Spindaceae	Ritha	1. Root powder is useful for piles. 2. Fruits are useful for hair.
<i>Semecarpus anacardium L.</i>	Anacardiaceae	Bhelma	1. People of some tribal communities burn it around the house after having a child so that any kind of germs do not reach the woman and child. 2. Fruit is useful for skin disease, immunity.
<i>Solanum virginianum</i>	Solanaceae	Bhatkataiya	1. Fruit is useful in asthma, cough, cold, dysentery, fever, worm and toothache. 2. Fruit and leaf are useful for bladder stones.
<i>Sphaeranthus indicus L.</i>	Asteraceae	Gorakhmundi	1. Flowers and fruits are commonly used for toothache and pyorrhea.
<i>Syzygium cumini L.</i>	Myrtaceae	Jamun	1. Bark is useful for jaundice. 2. Fruits are useful for digestion, dysentery, pimples, and blood purification. 3. Useful in teeth pain, mouth ulcer, and piles.
<i>Terminalia arjuna</i>	Combretaceae	Arjun	1. Stem bark powder is used for diabetes, blood pressure, and arthritis. 2. Decoction of stem bark is very much effective in heart disease.
<i>Terminalia bellirica Roxb.</i>	Combretaceae	Bahera	1. Fruits are useful in the eye, hair, blood impurity, heart disease, and anemia. 2. It is also useful for asthma, jaundice and laryngitis
<i>Terminalia chebula Retz.</i>	Combretaceae	Harra	1. Fruits are asthma, gladder stone, UTI, and mouth ulcer. 2. Root pest is useful for conjunctivitis, 3. Tribal women eat fruit paste for abortion and also use it

			for chronic ulcers.
<i>Tinospora cordifolia</i>	Menispermaceae	Gurij/ Giloy	1. Giloy decoction is an immunity booster. 2. It's useful for fever, diabetes, blood pressure, and arthritis.
<i>Vitex negundo</i> L.	Lamiaceae	Nirgundi	1. Fruit and seed powder is useful for fever. 2. Leaf juice helps in wound healing, eye disease, toothache, cough, etc.
<i>Gymnema sylvestre</i>	Apocynaceae	Gudmar	1. Leaf is used to treat diabetes, eye, asthma, gastric, infection, and indigestion. 2. It is used for cholesterol, blood pressure control, and skin disease.
<i>Clitoria ternatea</i>	Fabaceae	Aparajita	1. Leaf is useful for hair fall and skin disease. 2. It is very much useful for heart disease.
<i>Curkoma Ameda Roxb.</i>	Zingiberaceae	Aama Haldi	1. Powder is useful for toothache and skin disease. 2. It is useful for gastroenteritis and inflammation.
<i>Curcuma caesia</i>	Zingiberaceae	Kali Haldi	1. It is useful to cure asthma, bronchitis, pneumonia, and other lungs disease. 2. This is effective in leucoderma, skin disease, tooth pain, stomach pain, osteoarthritis, etc.
<i>Calotropis gigantea</i>	Apocynaceae	Akman/ Akwan	1. Fruit juice is useful for jaundice. 2. Whole plant is highly poisonous so it is also harmful. 3. Leaf milk made kaja (soot) which is useful for the eye.
<i>Hibiscus rosa-sinensis</i>	Malvaceae	Gudahal	1. Fresh flower is useful for cough and ulcer. 2. Flower powder is used for regular menstruation, and helps in pregnancy.

## Result

The study identifies 43 species of medicinal plants from 31 families of the plant kingdom. The data have been gathered from the traditional healer of Maikal hills. They use the above-mentioned plants to cure different kinds of diseases like blood disease; anemia, jaundice, blood pressure, kidney stone, bladder stone, women-related diseases; irregular menstruation, white discharge, UTI, skin disease; leukoderma, pimples, skin rash, ringworm, itching, burning, bone disease; osteoarthritis, arthritis, fracture, cut, respiratory disease; asthma, bronchitis, pneumonia, lungs disease, cough, heart disease, diabetes, sex-related disease; masculine power, premature ejaculation, erectile dysfunction, impotence, nightfall, general disease like eye disease, snakebite, fever, teeth pain, stomach pain, gastroenteritis, inflammation, digestion, dysentery, worm, Pyria, mouth ulcer, etc.

The unreached medical facility, lack of transport facility, easy availability of ethno-medicine and traditional healers, and the strong community belief in herbal medicine is the key reason for the significant use and practice of ethno-medicine among the tribal community (Kareti, *et al.* 2022). The tribal community deeply believes in their native folklore medicine for remedies (Debbarma *et al.*, 2017). The herbal medicine knowledge is transmitted orally and needs documentation by the researcher and practitioners so that this ethnic knowledge may be helpful for humankind.

## Conclusion

The ethno-medicine is the source of income for many Baiga tribal healers, but this is not a business for them, this shows the responsible consumption of nature. They know very well to sustainable use of medicinal plants. The tribal community is concerned about the conservation of forests and medicinal plants, and continuous degradation creates a problem for them. They have traveled more in the forest to search the medicinal plants (Uniyal, *et al.* 2006 & Dwivedi, *et al.* 2019). They have adequate knowledge and culture of herbal medicine. The Baiga community considered themselves Prakriti Putra (son of nature). The traditional healers use these shrubs, herbs, and trees for all most every disease. This ethno-medicine saves the life of tribal as well as non-tribal people,

from general diseases to fatal diseases like cancer. Many medicines are used alone, mostly combined with many other medicines. The traditional healers of the Baiga community practice are an example of nature conservation, religion, spirituality, and sustainable use of resources. A number of the study have been done on ethno-medicine from time to time (Ahirwar, 2017., Pandey, 2021., Narayan, 2017., Kosalge & Fursule, (2009) still many parts are untouched which further need to explore.

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