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Uses of medicinal plants on Fabaceae family in Betul

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Abstract
The research work was initiated to get information and reports on the medicinal plants in the Fabaceae family in Betul from July 2018 to August 2019. The present study deals with the study of medicinal plants used by local people of Betul, district of Madhya Pradesh India. A total of 18 medicinal plant species were used by the local health healers for the treatment of different diseases. The conventional medicinal plants were mostly used for different abscesses, asthma, cough and cold, dysentery, different skin diseases, ulcers, and leprosy. The medicinal plants used by the traditional users of Betul are arranged alphabetically followed by botanical name, local name, voucher number, parts used, and medicinal uses.

Keywords: Medicinal plants, Betul, Fabaceae family

Introduction

Leguminosae or Fabaceae, commonly known as the legume, bean, or pea family, is a large and economically important family of flowering plants. This group is the third largest land plant family, behind only Orchidaceae and Asteraceae, with 730 genera and over 19,400 species (Stevens, 2001) [16]. The largest genera are *Astragalus* (over 2,400 species), *Acacia* (over 950 species), *Indigofera* (about 700 species), *Crotalaria* (about 700 species), and *Mimosa* (about 500 species). Plants in this family are found around the world, growing in many different environments and climates. Numbers are important agricultural plants, including *Glycine max* (soybeans), *Phaseolus* (beans), *Pisum sativum* (peas), *Cicer arietinum* (chickpeas), *Medicago sativa* (alfalfa), *Arachis hypogea* (peanuts), and *Glycyrrhiza glabra* (licorice); Joe is among the most famous members of Fabaceae. The name Fabaceae comes from the defunct genus Faba, which is now included in Wikia. The word “faba” comes from Latin and simply means "bean". (Wiktionary, 2011) [17] Leguminosae is an older name that is still considered valid, (ICBN) Art. 18.5 (Vienna Code) and refers to the specific fruit of these plants, which are called legumes.

Medicinal and aromatic plants are important products found throughout the forest areas of Madhya Pradesh from plains to hills. More than 80% of the people in Madhya Pradesh rely on herbal remedies as a major means of preventing and curing diseases and following the traditional system of medicine. Madhya Pradesh is the perfect place to grow herbs used in Indian systems of medicine like Ayurveda, Siddha and Unani. Plants, shrubs and roots of immense medicinal value are found in abundance in Satpura, Vindhyachal, Amarkantak, Pachmarhi and Patalkot regions. Madhya Pradesh has got 1,35,164 sq km. km of forests which is 30.48 percent of the total geographical area of the state. Such systems have several advantages: the plants involved are readily available, easy to transport, and do not perish quickly. These plant-based treatments often have minimal side effects, and the relatively high cost of synthetic drugs often makes traditional herbal medicines an affordable alternative for the poor in these countries. The traditional medical systems of India are part of a time-honored and time-tested culture that continues to attract people even today. A culture that has successfully used nature to treat preliminary and complex diseases for over 3,000 years has contemporary relevance.

Betul district is situated in India’s heart state Madhya Pradesh on the banks of river Tapti. The National Highway No 69 and the railway line from New Delhi to Chennai pass through Betul. It is a historic place with rich tribal traditions. It is situated between 21˚22” N to 22˚24” N Latitude and 77˚04” E to 78˚33” E longitude (Fig-1).

The district is surrounded by Narmadapuram district in the North, Chhindwara in the East, Harda and East Nimar in the West and Maharashtra state in the south.

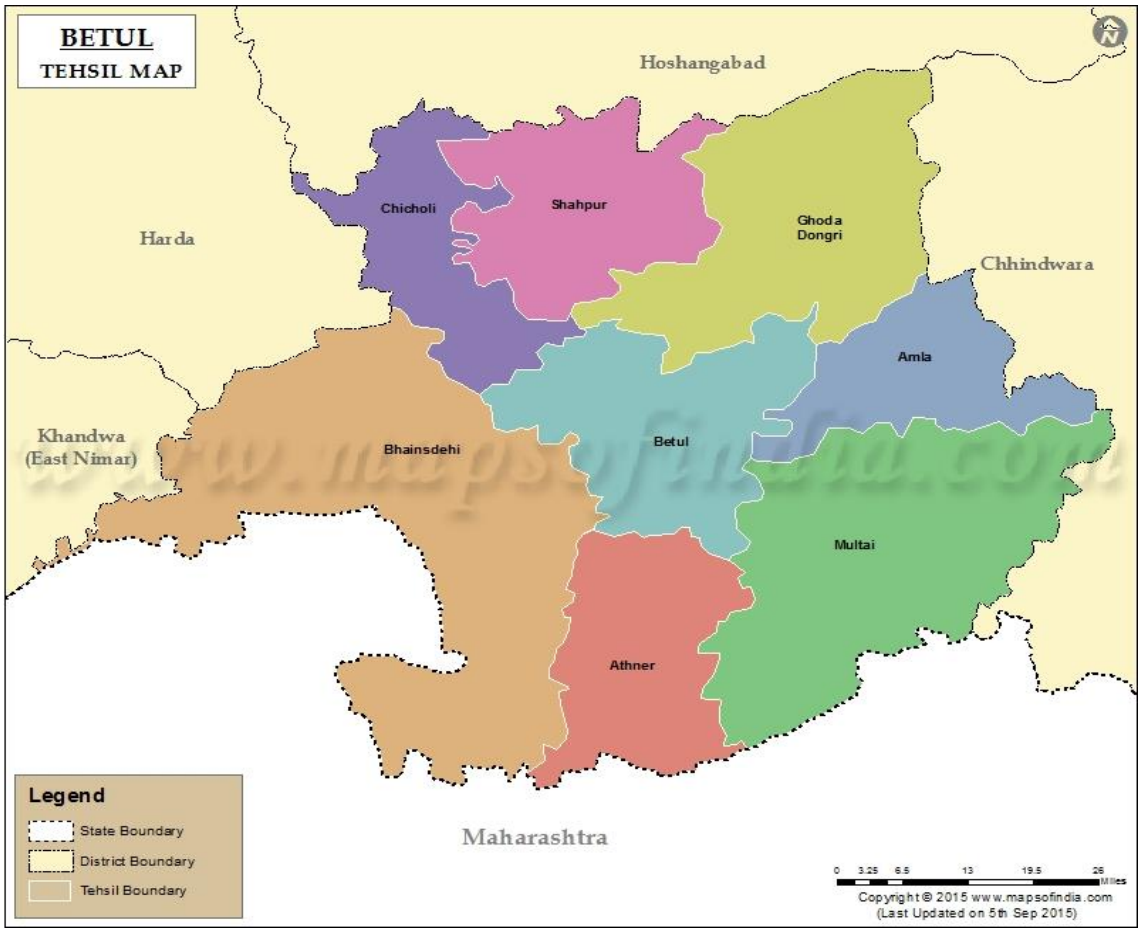

Fig 1: Betul District Map

Methodology

The present study is the outcome of one year of a critical field survey on medicinal plants in the Fabaceae family in the different parts of the Betul district during various seasons. All the specimens were collected in duplicate forms and they were deposited in the Herbarium of Botany department of Government Girls College, Vidisha (M.P.) Descriptions of species and identification were done with the help of published related literature and Flora of Madhya Pradesh, Verma, *et al.*, (1993) [18].

Observation

In the present study, the information received during the survey in the study regarding the medicinal plants' uses in the Fabaceae family and its parts has been listed (Table-1) as follows.

Table 1: Medicinal plants uses in the Fabaceae family in Betul

No	The scientific name of Plants	Local Name	Habit	Parts Use
1.	*Butea monosperma* (Lamk)	Palash	Tree	Bark, gum, flower and seed
2.	*Butea superba*	Palashbel	Climber	Root
3.	*Cassia fistula* Linn	Amaltaas	Tree	Bark leaves and pod
4.	*Clitoria ternetea* Linn	Aprajita	Climbing Herb	Roots and leaves
5.	*Dalbergia sissoo* Roxb.	Shisham	Tree	Leaves and stem
6.	*Delbergia peniculata* Roxb.	Dhobin	Tree	Leaves
7.	*Desmodium pulchellum* (L.) Bentham	Chipti	Shrub	Leaves
8.	*Dioscorea pentaphylla* L.	Mushalkand	Twinner	Tuber
9.	*Erythrina subrosa* Roxb.	Pangra	Small tree	Leaves
10.	*Mucuna pruriens* (Hook)	Gomachi	climbing Shrub	Seed
11.	*Ougeinia oojeinensis* (Roxb.)	Tinsa	Tree	Leaves
12.	*Pongamia pinneta* L.	Karanj	Tree	Seed and Roots
13.	*Psoralea corylifolia* L.	Bakuchi	Shrub	Leaves
14.	*Pterocarpus Marsupium* Roxb.	Bija	Tree	Stem
15.	*Senegalia catechu* (L. f) Willd	Kher	Tree	Bark
16.	*Tamarindus indica* L.	Imili	Tree	Fruit
17.	*Vachellia leucophloea* (Roxb.) Willd.	Rimjha	Tree	Bark
18.	*Vachellia nilotica* L.	Babool	Tree	Leaves and Bark

In the present study, medicinal plants in the Fabaceae family of Betul district of Madhya Pradesh were treated with abscesses, asthma, cough and cold; dysentery, different skin diseases, ulcers, and leprosy People have been recorded taking medication for inflammation, constipation, and weakness. Choudhury *et al.*, (2012) [9] found infections, boils, eczema, constipation, and kidney stones as the most common diseases treated with medicinal plants by the Chorei tribe in Southern Assam. Das *et al.*, (2009) [14] found the plant used for seminal weakness. Choudhuri *et al.*, (2012) [19], and Bhardwaj and Gakhar (2005) [20] observed that 17 species belonging to 14 families were used by the tribes of Mizoram for cuts and wounds. Kumar *et al.*, (2011) [15] observed that *Achyranthes aspera* was used for Malaria fever, delivery, Dropsy, and Bronchitis, while the same species was used for shivering and epilepsy.

Results and Discussion

Betul is one of the marginally located southern districts of Madhya Pradesh, lying almost wholly on the Satpura plateau. As per the census 2011, the proportion of literate to the total population is 68.90 percent in the Betul district. The literacy rate of the Betul district is 68.9 percent. The literacy rate in Madhya Pradesh was 69.32 % and India at 74.04 % as per the 2011 population census. In the present study observed 18 medicinal plants belonging to the Fabaceae family were used as medicine in Betul district of Madhya Pradesh *Butea monosperma* (Lamk), *Butea superb*, *Cassia fistula* Linn., *Clitoria ternetea* Linn *Dalbergia sissoo* Roxb., *Delbergia peniculata* Roxb., *Desmodium pulchellum* (L.) Bentham, *Dioscorea pentaphylla* L., *Erythrina subrosa* Roxb., *Mucuna pruriens* (Hook)., *Ougeinia oogenesis* (Roxb.), *Pongamia pinneta* L., *Psoralea corylifolia* L.., *Pterocarpus Marsupium* Roxb., *Senegalia catechu* (L. f) Willd, *Tamarindus indica* L., *Vachellia leucophloea* (Roxb.) Willd., *Vachellia nilotica* L., were also used medicinally (Table-1). Leaves were most frequently used (8 Plants species), followed by roots (3 species) and Seed (3 species), bark (5 species), Fruit (2 Species) and stems (2 Species), Tuber, Gum and Flower of one species each (Table-1).

The Tripuri tribes of the study area possess rich knowledge of medicinal plants and their utilization (Debbarma, Maria, *et al*., 2017) [13]. To cope with the objectives (Rama Shankar, Lavekar, Deb, and Sharma, 2012) [9] made interaction with villagers in different villages in Dhemaji and North Lakhimpur districts of Assam and the foothills of East Siang district of Arunachal Pradesh to know about genuine and reliable traditional healers in the area and came in contact with 11 traditional healers who are engaged in herbal treatment (Rama Shankar, Lavekar, Deb, and Sharma, 2012) [9]. The tribal community of central India is rich in ethnobotanical knowledge, which has been transmitted from one generation to another (Pandey, Patra, and Shukla, 2003) [21]. The present study also revealed that the tribal communities living in the same region have their traditional ethnobotanical knowledge (Pandey, 2000) [12]. This is because of their socio-economic structure, ancient traditional knowledge and beliefs. Their livelihood is dependent on their ecological surroundings and they use simple technology to sustain their life, which seems conservative (Pandey, 1997) [22]. The study emphasized that there is a profound and growing knowledge gap between the old and younger generations (Rai, Pandey, and Acharya, 2000) [3]. People more than 50-65 years of age know a lot about wild plant products as compared to the younger generation (Pandey and Bisaria, 1997) [2]. Maria Debbarma, (2017) [13] reported that 51 plant species parts are used by Tripuri tribes of Tripura to cure different diseases. Tripathi *et al*., (2013) [23] observed 45 species in South West Bengal. The plant Leaves were used in the majority of the cases (24 species) followed by fruit (7 species), root (6 species), bark (5 species), and whole plant (3 species). Pala *et al.* (2012) [4] also observed leaves as the dominant plant part used in traditional medicine in Garhwal Himalaya. Pandey and Mavinkurve (2014) [11] found in their study of ethnomedicinal plants used by the Chakma tribe of Tripura, leaves were the most important plant part used.

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