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Ethnomedicinal plants of Pench National Park, Seoni (M.P.) India

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Abstract

In the study, 48 medicinal plant species belonging to 39 genera and 30 families have been recorded. Out of these, the most important species found were *Boerhavia diffusa*, *Dillenia pentagyna*, *Holarrhena antidysenterica*, *Justicia adhatoda*, *Oroxylum indicum*, *Rauvolfia serpentina*, *Terminalia arjuna*, *Terminalia bellerica* and *Terminalia chebula*. The natural distribution of these medicinal plant species in 3 different ranges of Pench National Park were marked with the help of GPS. The study revealed that the documented medicinal plants have potential curative properties with immense market value. Moreover, the plants can be grown commercially by the villagers of the fringes area of Pench National Park through improved agro-technique for the betterment of livelihood.

Keywords: Ethnomedicine, pench national park, medicinal plants, Seoni district

Introduction

Traditionally, various tribes have been using medicinal plants from time immemorial for the treatment of various types of diseases. Traditional system of medicine plays a very prominent role in healthcare system of the rural people covering all types of ailments. Rigveda and Atharvavedas have details to cure different diseases. Charaka Samhita and Shusruta Samhita are regarded two most important documents of this system of medicine.

Pench National Park is located in the heart of India- Madhya Pradesh and covers a total area of 758 sq.km. It is located on the southern part of Madhya Pradesh, to be specific, in the districts of Seoni and Chhindwara, which also shares a boundary with Maharashtra. An additional area of 257 sq.km of this park lies in Maharashtra but is also accessible from Madhya Pradesh. A treasure of rich flora and fauna, this national park has its area segregated in two divisions- a) Priyadarshini National Park and Mowgli Pench Sanctuary which covers an area of 299 sq.km and b) 464 sq.km which is considered as the buffer area. The national park is named after the river- Pench, which while flowing from north to south, divides the national park in almost equal halves namely eastern and western halves. The park is just not home to wildlife but also to humans.

Pench National Park comprises 758 km² (293 sq mi), of which 299 km² (115 sq mi) form the park's core area and Mowgli Pench Sanctuary. The remaining 464 km² (179 sq mi) form the buffer zone. Elevation ranges from 425 to 620 m (1,394 to 2,034 ft). The protected area is covered with small hills and teak mixed forest in the southern reaches of the Satpura Range. The temperature varies from 4°C (39°F) in December to 42°C (108°F) in May. Average rainfall is 1,300 mm (51 in).

Though Pench National Park looks very similar to the classic tale, it actually is more than that. The national park is home to flora species like Mahua, White Kulu, Salai, Saja, Bija Sal, Dhaora, Amaltas and many other. Apart from trees, the park is filled with grasslands, plants and saplings.

Material and methods

Field trips were conducted during 2020-2022 in Pench National Park covering 3 ranges, viz. Rukhad, Turia gate and Kamajhiri (Fig. 1). Detailed work plan was prepared with the help of topomaps available in the Forest Department. Extensive exploration trips were made to record the populations of different medicinal plants in Pench National Park and the locations were marked with the help of Global Positioning System (GPS). Voucher specimens were collected, identified properly consulting a flora (Kanjilal *et al.* 1938) ^[1].

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Plants were identified with the help of available literature (Mudgal *et al.* 1997, Verma *et al.* 1993, Jain and Rao, 1976, Singh and Mishra, 2021 and Singh and Mishra, 2021) [2-6] and comparing with the already identified plant specimens of the herbarium at Department of Botany, B.S.I., Allahabad (U.P.). After correct identification, the plants were deposited in herbarium at Department of Botany, S.G.S. Govt. P.G. College, Sidhi (M.P.) for future references. Ethno-medicinal inventory was developed consisting of botanical name followed by their local name, family, part used and ethnomedicinal uses.

Results and Discussion

Forty eight medicinal plant species belonging to 39 genera and 30 families are being used for treating different ailments. Besides these medicinal properties, the plants have other uses also like edible fruit, vegetables, timber, fiber and fodder (Table 1). The family Apocynaceae and Verbenaceae

contributed highest 4 species each followed by Combretaceae and Rubiaceae contributing 3 species each. *Boerhavia diffusa* is used in the treatment of jaundice, *Centella asiatica* in the treatment of stomach disorder and also as vegetable. *Cinnamomum obtusifolia* and *Cinnamomum zeylanica* are widely used as medicine and as spice. *Clerodendrum indicum*, and *Clerodendrum viscosum* are used in the treatment of stomach disorder whereas *Dillenia pentagyna* and *Oroxylum indicum* are traditionally used as an anticancer drug. *Holarrhena antidysenterica* is used against dysentery, *Justicia adhatoda* is used in the treatment of stomach disorder. Roots of *Rauvolfia serpentina* are used to cure high blood pressure. With the help of GPS ground truthing, following 3 statuses of medicinal plants in Pench National Park were recorded: Frequently observed species in almost all areas (common), less frequently observed species (scattered), and very less frequently observed species in some particular areas (rare).

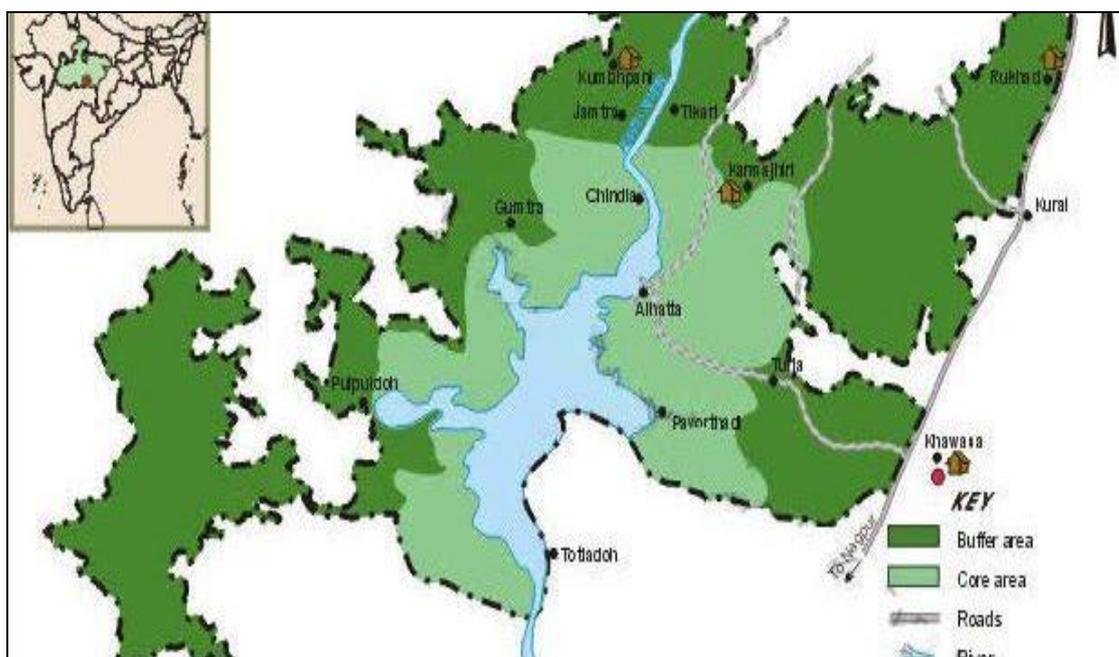


Fig 1: Location map of the Pench National Park.

In the study, 27 plant species such as *Boerhavia diffusa* L., *Bombax ceiba* L., *Butea monosperma* (Lam.) Taubert, *Calotropis procera* Buch.-Ham., *Cannabis sativa* L., *Casearia vareca* Roxb., *Centella asiatica* (L.), *Clerodendrum indicum* (L.) Kuntze, *Clerodendrum viscosum* Vent., *Cynodon dactylon* (L.) Pers., *Dillenia indica* L., *Dillenia pentagyna* Roxb., *Emblia officinalis* Gaertner, *Hedyotis scandens* Roxb., *Homonoia riparia* Lour., *Ipomoea aquatica* Forssk., *Justicia adhatoda* L., *Murraya koenigii* (L.) Sprengel, *Nymphaea nouchali* Burm. f., *Nymphaea pubescens* Hook. f. & Thomson, *Oxalis corniculata* L., *Sida cordifolia* Linn., *Syzygium cumini* (L.) Skeels, *Terminalia arjuna* (Roxb.), *Terminalia belerica* (Gaertner) Roxb., *Terminalia chebula* (Gaertner) Retz., *Trichosanthes tricuspidata* Lour. are common. Sixteen species, viz. *Alstonia scholaris* (L.) Brown., *Azadirachta indica* Adr. Juss., *Cassia fistula* L., *Cinnamomum obtusifolia* (Roxb.) ex Ness., *Cinnamomum zeylanica* L., *Clematis gouriana* Roxb. ex DC., *Costus speciosus* (J. Koenig) Sm., *Hedyotis corymbosa* (L.) Lam., *Hedyotis costata* (Roxb.) Kurz, *Ocimum sanctum* Linn., *Oroxylum indicum* (L.) Vent., *Piper longum* L., *Rauvolfia serpentina* (L.) Benth. ex Kurz, *Smilax ocreata* A. DC., *Smilax perfoliata* Lour., *Streblus asper* Lour. are scattered.

Flacourtia jangomas (Lour.) Raeusch., *Holarrhena antidysenterica* (Roxb. ex Fleming) Wallich ex A. DC., *Kydia calycina* Roxb., *Stephania japonica* (Thunb.) Miers, *Terminalia belerica* (Gaertner) Roxb. are rare.

Some species e.g. *Flacourtia jangomas* (Lour.) Raeusch., *Holarrhena antidysenterica* (Roxb. ex Fleming) Wallich ex A. DC., *Kydia calycina* Roxb., *Stephania japonica* (Thunb.) Miers, *Terminalia belerica* (Gaertner) Roxb. are facing threats in Rukhad, a gate and Kamajhiri range due to anthropogenic pressure mainly due to illegal falling. The people of fringe villages of Pench National Park collect these medicinal plants. Large scale collection of medicinal plants is banned in Rukhad and Kamajhiri range of eastern and middle part of the Pench National Park. In the western Turia gate range, collection of certain Turimedical plant species is still which may bring them under a threat category. Measures should be taken to prevent anthropogenic pressure for future germplasm conservation as well as the conservation of Pench National Park. The topography as well as edephic conditions of the fringe villages of Pench National Park are almost same as that of core zone of the park. Therefore, most of the important medicinal plants with high market value can also be grown in the fringe villages areas through improved agro-

technique. This may improve the socio-economic condition of the park dwellers for betterment of the livelihood of fringe

villagers. This may also reduce the pressure on natural medicinal plant resources.

Table 1: Uses of medicinal plants of Pench National Park

S No	Plant name	Medicine	Fruits	Vegetables	Timber	Fiber	Fodder
1.	<i>Alstonia scholaris</i> (L.) Brown.	+					
2.	<i>Azadirachta indica</i> Adr. Juss	+					
3.	<i>Boerhavia diffusa</i> L.	+					
4.	<i>Bombax ceiba</i> L.	+				+	
5.	<i>Butea monosperma</i> (Lam.) Taubert	+					
6.	<i>Calotropis procera</i> Buch.-Ham.	+					
7.	<i>Cannabis sativa</i> L.	+					
8.	<i>Casearia vareca</i> Roxb.	+					
9.	<i>Cassia fistula</i> L.	+			+		
10.	<i>Centella asiatica</i> (L.) Urban	+		+			
11.	<i>Cinnamomum obtusifolia</i> (Roxb.) ex Ness.	+					
12.	<i>Cinnamomum zeylanica</i> L.	+					
13.	<i>Clematis gouriana</i> Roxb. ex DC.	+		+			
14.	<i>Clerodendrum indicum</i> (L.) Kuntze	+					
15.	<i>Clerodendrum viscosum</i> Vent.	+					
16.	<i>Costus speciosus</i> (J. Koenig) Sm.	+					
17.	<i>Cynodon dactylon</i> (L.) Pers	+					
18.	<i>Dillenia indica</i> L.	+	+	+	+		
19.	<i>Dillenia pentagyna</i> Roxb.	+			+		
20.	<i>Emblia officinalis</i> Gaertner.	+	+				
21.	<i>Flacourtia jangomas</i> (Lour.) Raeusch.	+	+				
22.	<i>Gmelina arborea</i> Roxb. ex Sm.	+			+		
23.	<i>Hedyotis corymbosa</i> (L.) Lam.	+					
24.	<i>Hedyotis costata</i> (Roxb.) Kurz	+					
25.	<i>Hedyotis scandens</i> Roxb.	+					
26.	<i>Holarrhena antidysenterica</i> (Roxb. ex Fleming) Wallich ex A. DC	+					
27.	<i>Homonoia riparia</i> Lour.	+					
28.	<i>Ipomoea aquatica</i> Forssk.	+		+			
29.	<i>Justicia adhatoda</i> L.	+					
30.	<i>Kydia calycina</i> Roxb.	+					
31.	<i>Murraya koenigii</i> (L.) Sprengel	+					
32.	<i>Nymphaea nouchali</i> Burm. f.	+					
33.	<i>Nymphaea pubescens</i> Hook. f. & Thomson	+					
34.	<i>Ocimum sanctum</i> Linn.	+					
35.	<i>Oroxylum indicum</i> (L.) Vent.	+			+		
36.	<i>Oxalis corniculata</i> L.	+		+			
37.	<i>Piper longum</i> L.	+					
38.	<i>Rauwolfia serpentina</i> (L.) Benth. ex Kurz	+					
39.	<i>Sida cordifolia</i> Linn.	+					
40.	<i>Smilax ocreata</i> A. DC.	+					
41.	<i>Smilax perfoliata</i> Lour.	+					
42.	<i>Streblus asper</i> Lour.	+					
43.	<i>Stephania japonica</i> (Thunb.) Miers	+					
44.	<i>Syzygium cumini</i> (L.) Skeels	+	+				
45.	<i>Terminalia arjuna</i> (Roxb.)	+			+		
46.	<i>Terminalia belerica</i> (Gaertner) Roxb.	+					
47.	<i>Terminalia chebula</i> (Gaertner) Retz.	+			+		
48.	<i>Trichosanthes tricuspidata</i> Lour.	+			+		

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