Observation and Documentation of Medicinal Plant Diversity of Seoni District, Madhya Pradesh Used in Traditional Medicine for Skin Diseases

Praveen Parate and Naureen S. Khan*

*Department of Life science, Dr. C.V. Raman University
Kargi Road, Kota, Bilaspur (C.G.), India*

ABSTRACT

The paper reports ethnobotanical study based on the traditional medicinal plants used by the local population for the treatment of skin diseases. The main aim of the study was to observe and document medicinal plants of Seoni district, Madhya Pradesh. In the present study exhaustive field exploration and study was conducted to survey medicinal plants originating in eight tehsils of Seoni District from November 2019 to November 2020. The ethnobotanical data was collected using field work and survey method by performing semi-structured interviews and group discussions with the traditional healers and the local population. The ethnomedicinal survey yielded documentation of 97 plant species belonging to 43 families and 90 genera. The most dominant families observed in the study were Fabaceae, Cucurbitaceae, Poaceae, Moraceae, Caesalpinaceae, Rutaceae, Apiaceae, Anacardiaceae, Zingiberaceae, Chenopodiaceae, Rosaceae, Liliaceae, Arecaceae and Malvaceae. The tribals possess tremendous traditional knowledge of medicinal plants that can be used to cure different ailments. However, urbanization and expansion on agricultural practices have become a major threat to the medicinal plants. Hence, it is of utmost importance to preserve the indigenous knowledge of herbal medicines through identification and systematic documentation. The present study also aims to document the use of traditional herbal medicines of Seoni district that are used for curing skin problems. Conservation of the traditionally important plant species with the help of local population will enhance the ethnomedicinal diversity of the place.

KEY WORDS: SEONI, MADHYA PRADESH, MEDICINAL PLANTS, DOCUMENTATION, HERBAL MEDICINES, CONSERVATION.

INTRODUCTION

Plants form an integral part of our lives as they provide bioactive compounds and secondary metabolites that can fight several infections (Singh et al., 2020). Medicinal plants are traditionally used in herbal and Ayurvedic

medicines for curing different ailments (Lal and Sahu, 2019). The practice and use of traditional medicine has been conducted throughout the world for healing various human diseases (Hussain et al., 2018; Singh et al., 2020). Tribal population across the globe still depends on the medicinal plants for first aid treatment of cough, cold, fever and other related diseases (Ayyan and Ignacimuthu, 2011). Thus, traditional medicinal practices are a piece of knowledge that is transferred through generations for diagnosis, management and treatment of body ailments (Jima and Megersa, 2018; Vendrapati et al., 2020).

Madhya Pradesh comes in the central part of India and has a rich and diverse bio-geographical area (Lal and Sahu, 2019). Seoni district is located near the Satpura plateau and has a vast store of herbal plants

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and traditional medicinal knowledge. The area is rich in diverse flora across the district and its medicinal knowledge is still preserved by the herbal healers, vaidya and the tribal population. The Seoni district is divided into eight tehsil places that are Lakhnadaun, Ghansaur, Dhanora, Chhapara, Keolari, Seoni, Barghat and Kurai. The tribal population and the forest dwellers have access to the remote areas of the forests and are mostly dependent on the medicinal plant knowledge for curing several ailments.

Ethnomedicinal work in India and across the globe has also been studied and outlined by a number of research scholars such as Mohan et al., (2008); Alyemeni et al., (2010); Ayyanar and Ignacimuthu (2011); Karunamoorthi et al., (2012); De Wet et al., (2013); Rahman (2013); Sharma et al., (2013); Pius et al., (2015); Bandyopadhyay (2017); Hussain et al., (2018); Jima and Megersa (2018); Satpute (2020); Singh et al., (2020); Vendrapati et al., (2020). Similarly, Several ethnomedicinal work related to the medicinal flora of Madhya Pradesh has been done by many researchers as Dwivedi et al. (2008); Nath and Khatri (2010); Jatav and Mehta (2013); Ahirwar (2014); Wagh and Jain (2014); Rai (2016); Ahirwar (2017); Ahirwar et al. (2017); Iqbal (2017); Rai (2017); Gwalvanshi and Bishwas (2017); Pal and Patel (2017); Jain et al. (2018); Lal and Sahu (2019). However, in Central India, Seoni district was unexposed to ethnomedicinal survey and documentation of the traditional medicinal flora. Hence, the present study was performed to identify and document the medicinal plant diversity of the eight tehsils of Seoni district and also analyze the use of the medicinal plants in healing skin diseases.

MATERIAL AND METHODS

Seoni district is situated on North-South area of Satpura Plateau and lies between latitude 21° 36' & 22° 57' North and longitude 79° 19' and 80° 17' East. The total geographical area of Seoni district is 8,758 km². For the ethnomedicinal study eight tehsils of Seoni District, Madhya Pradesh namely Lakhnadaun (LD), Ghansaur (GS), Dhanora (DN), Chhapara (CP), Keolari (KL), Seoni (SN), Barghat (BG) and Kurai (KR) were selected (Figure 1 A). The study was performed to identify and document the traditional medicinal flora of the Seoni district. The survey was conducted from November 2019 to November 2020 and plant samples were collected through medicinal information gathered from traditional healers, vaidya and the local tribal population (Figure 1 B and C).

The medicinal information was obtained using interview method and preparation of question design technique and group discussions. Method of cross checking the information through different sources and sampling technique was also followed. The identification of the plant samples was conducted with the help of local tribals of the place and the traditional healers of the locality. Identification of the plant specimens was performed using the Book, Flora of Madhya Pradesh Vol. 1 and Ayurved Jadi Booti Rahasya Vol. 1, literature available through other sources was also referred for the study.

Figure 1: A- Map of Seoni district showing Eight Tehsils (Sampling sites) for collection of Medicinal plants. B and C- Fieldwork and collection of medicinal plants with help of tribals.

RESULTS AND DISCUSSION

In the present study, 97 plant species belonging to 43 families and 90 genera have been identified and documented (Table 1). Plants of ethnomedicinal importance were collected from eight tehsils (Lakhnadaun, Dhanora, Ghansaur, Chhapara, Keolari, Seoni, Barghat and Kurai) of Seoni district. From the study it was observed that the highest number of medicinal plants was observed in Seoni and Barghat Tehsils (Graph 1). The traditional healers and the tribals use these plants for their medicinal importance. Out of the total number of reported plant species, plant families Fabaceae, Cucurbitaceae and Poaceae were found to be the most dominant which depicted nine and six plant species followed by Moraceae, Caesalpinaceae, Apiaceae, Malvaceae, Myrtaceae, Anacardiaceae, Solanaceae, Zingiberaceae, Oleaceae, Chenopodiaceae, Lamiaceae, Combretaceae, Apocynaceae, Arecaceae, Liliaceae, Brassicaceae and Rutaceae which showed five and less than five plant species while, plant families Asteraceae, Linaceae, Punicaceae, Cuscutaceae, Araceae, Myristicaceae, Pedaliaceae, Lythraceae, Bixaceae, Rubiaceae, Nymphaeaceae, Musaceae, Magnoliaceae, Cactaceae, Meliaceae, Caricaceae, Mimosaceae, Tilaceae, Rhamnaceae, Annonaceae, Verbenaceae and Ongraceae reported single plant species (Graph 2.1- 2.4).

The reported plant species are used by the traditional healers and forest dwellers for the treatment for various skin ailments. The use of medicinal plants for curing different ailments is prevalent in this region and a large number of local populations rely on this indigenous knowledge and abundantly available herbal flora. As the modern medicinal facilities and allopathic medicines are out of the reach of tribals due to their high cost and lack of availability the medicinal plants knowledge is

transferred through generations through the traditional healers.

Ethnomedicinal documentation of medicinal plants was also carried out by Nath and Khatri (2010), the authors reported documentation of ethnomedicinal data of Chhindwara and Betul districts and uses of medicinal plants for the treatment of various diseases. Seventy seven species of medicinal plants was reported from Chhindwara district and 50 species of plants were reported from Betul district in the study. De Wet et al. (2013) studied the ethnomedicinal uses of plants found

in the rural community of Northern Maputaland, South Africa for various skin disorders. The authors concluded use of nine different medicinal plant species for curing skin infections like rashes, ringworm, sores, wounds, acne, burns and boils. Gwalvanshi and Bishwas (2017) also documented ethnomedicinal plants of Balaghat district and their ethnoveterinary uses. For the study two divisions of Balaghat district were selected and field work and survey for documentation of medicinal plants was performed. The medicinal plants identified in the survey were used by the tribal people for curing different ailments of animals.

Table 1. Tabular representation of list of Medicinal plants observed in 8 Tehsils of Seoni District, Madhya Pradesh, India.

SN.	BOTANICAL NAME	COMMON NAME	FAMILY	DISTRIBUTION
1.	<i>Helianthus annuus</i> Linn	Suryamukhi	Asteraceae	LD
2.	<i>Trachyspermum ammi</i>	Ajwain	Apiaceae	GS,DN,CP
3.	<i>Daucus carota</i> Linn var sativa	Gajar	Apiaceae	KL,SN,BG,KR
4.	<i>Coriandrum sativum</i> Linn	Dhaniya	Apiaceae	BG,KR,SN
5.	<i>Foeniculum vulgare</i> Mill	Sauf	Apiaceae	BG
6.	<i>Linum usitatissimum</i>	Alsi	Linaceae	BG,KR
7.	<i>Punica granatum</i> Linn	Anar	Punicaceae	BG,SN,KL
8.	<i>Clitoria ternatea</i> Linn	Aparajita	Fabaceae	CP
9.	<i>Cajanus cajan</i> (L) Millsp	Arhar	Fabaceae	DN,GS,LD
10.	<i>Derris indica</i> (Lam.) Bennet	Karanj	Fabaceae	BG
11.	<i>Butea monosperma</i> Linn	Palash	Fabaceae	BG,KR
12.	<i>Lens culinaris</i> Medik	Masur	Fabaceae	CP
13.	<i>Vigna radiata</i> (Linn) wilczek var.radiata verdcourt	Mung	Fabaceae	KL,SN,BG,KR
14.	<i>Arachis hypogea</i> Linn	Mungfali	Fabaceae	BG
15.	<i>Vigna aconitifolia</i> Marechal	Moth	Fabaceae	KL,SN,BG,KR
16.	<i>Dalbergia sissoo</i> Roxb ex dc	Sheesham	Fabaceae	KR,BG,SN
17.	<i>Cuscuta reflexa</i> Roxb	Amar bel	Cuscutaceae	KR,BG
18.	<i>Syzygium cumini</i> (Linn) Skeels	Jamun	Myrtaceae	LD,GS,DN
19.	<i>Syzygium aromaticum</i> (Linn) merr&t l.m.perry	Laung	Myrtaceae	CP,KL,SN,BG
20.	<i>Cassia fistula</i> Linn	Amaltas	Caesalpiniaceae	KR,BG
21.	<i>Bauhinia variegata</i> Linn	Kachnar	Caesalpiniaceae	BG
22.	<i>Delonix regia</i> (Boj ex hook) raf	Gulmohar	Caesalpiniaceae	BG,KR
23.	<i>Senna tora</i> (Linn) roxb	Panwar	Caesalpiniaceae	BG
24.	<i>Amorphophallus paeoniifolius</i>	Suran	Araceae	LD,GS,DN,CP
25.	<i>Mangifera indica</i> Linn	Aam	Anacardiaceae	KL,SN,BG,KR
26.	<i>Anacardium occidentale</i> Linn	Kaju	Anacardiaceae	GS,DN,CP
27.	<i>Solanum tuberosum</i> Linn	Aaloo	Solanaceae	KL
28.	<i>Lycopersicon esculentum</i> Mill	Tamatar	Solanaceae	SN,BG,KR
29.	<i>Datura metel</i> Linn	Dhatura	Solanaceae	CP,KL,SN
30.	<i>Solanum melongena</i> Linn	Baigan	Solanaceae	BG
31.	<i>Amomum subulatum</i> Roxb	Badi Elaichi	Zingiberaceae	SN,BG,KR
32.	<i>Zingiber officinale</i> rocs.	Adrak	Zingiberaceae	BG
33.	<i>Curcuma longa</i> Linn	Haldi	Zingiberaceae	LD,GS,DN,CP
34.	<i>Ficus carica</i> Linn	Anjir	Moraceae	KL,SN
35.	<i>Artocarpus hetrophyllum</i> Lam	Kathal	Moraceae	SN
36.	<i>Morus alba</i> Linn	Shehtut	Moraceae	BG,KR,SN
37.	<i>Ficus religiosa</i> Linn	Peepal	Moraceae	SN,BG,KR

Table 1 Continue

38	<i>Ficus benghalensis</i> L.	Bargad	Moraceae	LD,GS,DN
39	<i>Anthocephalus cadamba</i> Roxb. mig	Kadamba	Rubiaceae	BG,SN
40	<i>Tabernaemontana divaricata</i> Chandni (Linn) R. Br. Ex Roem & Schult	Apocynaceae	BG,SN	
41	<i>Catharanthus roseus</i> (Linn) g. don	Sadapuspa	Apocynaceae	SN
42	<i>Gossypium herbaceum</i> Linn	Kapas	Malvaceae	CP,KL,SN
43	<i>Hibiscus rosasinensis</i> Linn	Gudhal	Malvaceae	BG,SN
44	<i>Abelmoschus esculentus</i>	Bhindi	Malvaceae	KR,SN,LD
45	<i>Nelumbo nucifera</i>	Kamal	Nymphaeaceae	KR,LD
46	<i>Momordica dioica</i> Roxb Ex . willd	Karkoti	Cucurbitaceae	SN
47	<i>Momordica dioica</i> charantia	Karela	Cucurbitaceae	SN,KL,CP
48	<i>Cirtullus vulgaris</i> var. fistulosus (Stocks) Duthie & Fuller	Tarbuj	Cucurbitaceae	SN
49	<i>Trichosanthes dioica</i> Roxb	Parval	Cucurbitaceae	BG,GS,LD
50	<i>Lagenaria siceraria</i> (Molina) standl	Lauki	Cucurbitaceae	BG,SN
51	<i>Cayaponio laciniola</i> (Linn) C. Jeffery	Shivalingi	Cucurbitaceae	CP,LD,SN,BG
52	<i>Anacardium occidentale</i> Linn	Kaju	Anacardiaceae	SN
53	<i>Saccharum spontaneum</i> Linn	Kaans	Poaceae	SN,BG
54	<i>Desmostachya bipinnata</i> (Linn) stapf.	Kush	Poaceae	SN,BG,KR
55	<i>Rosa centifolia</i> Linn	Gulab	Poaceae	LD,GS,DN
56	<i>Oryza sativa</i> Linn	Chawal	Poaceae	CP,KL,SN
57	<i>Cynodon dactylon</i> (Linn) pers	Dub	Poaceae	BG,SN,LD,KL
58	<i>Bambusa arundinaceae</i> Willd	Bans	Poaceae	SN,BG
59	<i>Musa paradisiaca</i> Linn	Kela	Musaceae	SN
60	<i>Phoenix sylvestris</i> (Linn) Roxb	Khajur	Arecaceae	BG
61	<i>Cocos nucifera</i> Linn	Nariyal	Arecaceae	DN,CP,KL
62	<i>Areca catechu</i> Linn	Supari	Arecaceae	BG,SN
63	<i>Aloe vera</i> (Linn) burm. . F .	Gwarpatha	Liliaceae	LD,GS,DN
64	<i>Allium cepa</i> Linn	Pyaz	Liliaceae	CP,KL,SN
65	<i>Allium sativum</i> Linn	Lasun	Liliaceae	BG
66	<i>Pyrus communis</i> Linn	Nashpati	Rosaceae	KL,LD
67	<i>Prunus amygdalus</i> Batsch	Badam	Rosaceae	DN,CP
68	<i>Brassica rapa</i> Linn	Shalgam	Brassicaceae	SN
69	<i>Brassica campestris</i> Linn	Sarso	Brassicaceae	BG
70	<i>Michelia champaca</i> Linn	Champa	Magnoliaceae	SN,BG
71	<i>Jasminum officinale</i> Linn	Chameli	Oleaceae	KR
72	<i>Jasminum sambac</i> (Linn)	Bela	Oleaceae	BG,SN,KL,CP, DN
73	<i>Manilkara zapota</i> (Linn) p. van royen	Chikoo	Oleaceae	GS,DN,CP
74	<i>Beta vulgaris</i> Linn	Chukandar	Chenopodiaceae	BG,SN
75	<i>Spinacia oleracea</i> Linn	Paalak	Chenopodiaceae	SN,BG
76	<i>Chenopodium album</i> Linn	Bathua	Chenopodiaceae	SN,KL,CP
77	<i>Myristica fragrans</i> houtt	Jaiphal	Myristicaceae	LD,GS,DN
78	<i>Sesamum indicum</i> Linn	Til	Pedaliaceae	SN
79	<i>Ocimum sanctum</i> Linn	Tulsi	Lamiaceae	BG,SN
80	<i>Mentha spicata</i> Linn	Pudina	Lamiaceae	KL,SN,BG,KR
81	<i>Opuntia dillenii</i>	Nagfani	Cactaceae	LD,BG,GS
82	<i>Azadirachta indica</i> Linn	Neem	Meliaceae	SN,BG,KL
83	<i>Murraya koenigii</i> Linn	Meethi Neem	Rutaceae	LD,GS
84	<i>Citrus aurantiifolia</i> (Christm.) Swingle	Nimbu	Rutaceae	BS,GS
85	<i>Aegle marmelos</i> Linn correa	Bel	Rutaceae	GS,LD,KL
86	<i>Citrus sinensis</i> (Linn) Osbeck	Mosumbi	Rutaceae	SN,KL,LD
87	<i>Carica papaya</i> Linn	Papita	Caricaceae	KR,SN,KL

Table 1 Continue

88	<i>Acacia senegal</i> Linn	Babul	Mimosaceae	GS,SN,BG
89	<i>Sida acuta</i> Burm f.	Baraira	Tilaceae	KL,SN
90	<i>Terminalia bellirica</i> (Gaertn) Roxb	Baheda	Combretaceae	KR,KL,LD
91	<i>Terminalia catappa</i> Linn	Jungli Badam	Combretaceae	GN,SN
92	<i>Ziziphus mauritiana</i> Lam	Ber	Rhamnaceae	BG,KL
93	<i>Lawsonia inermis</i> Linn	Mehendi	Lythraceae	BG
94	<i>Annona squamosa</i> Linn	Sitafal	Annonaceae	BG,SN
95	<i>Tectona grandis</i> Linn	Sagvan (sagon)	Verbenaceae	BG,KL
96	<i>Bixa orellana</i> Linn	Sinduria	Bixaceae	KL,KR,LD
97	<i>Trapa natans</i> Linn var. <i>bispinosa</i> (Roxb) makino	Singhada	Onagraceae	KL,SN,BG

Graph 1: Block wise distribution of Plant species from Seoni District, Madhya Pradesh. LD- Lakhnadaun; GS- Ghansaur, DN-Dhanora, CP- Chapara, KL- Kevlari, SN- Seoni, BG- Barghat, KR-Kurai.

Graph 2.3: Comparative account of dominant plant families.

Graph 2.1: Comparative account of dominant plant families.

Graph 2.4: Comparative account of dominant plant families.

Graph 2.2: Comparative account of dominant plant families.

The authors highlighted 41 plant species that the tribals used for curing fever, jaundice, diarrhea, dysentery, cough and asthma. Jima and Megersa (2018) performed ethnobotanical survey for documentation of medicinal plants used by local communities of Berbere district, South East Ethiopia for the treatment of various human diseases. The authors identified 70 medicinal plants belonging to 56 genera and 46 families in the survey. Singh et al. (2020) explored the ethnobotanical diversity of Jasrota Hill in Western Himalaya region. The study was conducted to check local healing practices followed by the local dwellers of the region for the treatment of various diseases. The authors determined ethnomedicinal uses of 121 plant species belonging to 105 genera and 53 families.

Ahirwar et al. (2017) reported survey of medicinal plants of Tikamgarh, Madhya Pradesh for the detection of plants species used by the tribal people for curing fever.

The present study overviews documentation of maximum number of medicinal plant species used for preparation

of herbal medicines by the traditional healers and tribals. Seoni district has rich herbal biodiversity which was observed in the study, the tribals and rural inhabitants of the place largely depend on this medicinal treasure to treat various ailments. Concrete measures should be taken to conserve this rich natural flora of Seoni district along with the traditional herbal medicine knowledge.

CONCLUSION

The observations and data acquired from the traditional healers in the above study indicate that the tribal people possess prominent knowledge of the medicinal plants found in the region. The fieldwork and survey of all the eight tehsils of Seoni district showed presence of prosperous biodiversity of the region with the Seoni and Barghat tehsil treasuring highest number of medicinal plant species. In the overall study, 97 plant species were documented belonging to 43 plant families with the help of the tribals and the locals of the area. Further studies related to the medicinal preparations using the herbal plants will be investigated. The study strongly supports conservation and documentation of the vast flora of the Seoni district.

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