



AN ETHNO-BOTANICAL STUDY OF MEDICINAL PLANTS OF TONK DISTRICT

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The ethno botanically important and economic plants of Tonk district of Rajasthan, India were identified and documented. The tribes and rural people of Tonk district of Rajasthan state of India use a number of medicinal plants available locally as ‘traditional medicine’ for curing common ailments. The ethno botanical information was collected by field survey among tribal and rural communities, by study of rituals and folklores and through market survey followed by identification with herbaria and flora, 200 respondents were selected randomly for the purpose. The paper presents 95 medicinal plants belonging to 51 families utilized by these people. Fresh leaves, stem, bark, flowers, fruits, seeds, roots and even whole plants were reported to be used. The present record on the traditional medicine of Tonk district of Rajasthan emphasizes that many people of the region still depend upon flora of the region for treatment of human diseases. There is a need to focus on more ethno botanical research, conservation and documentation of traditional medicinal knowledge among indigenous communities of the state as this knowledge is limited only to Hakeems, Ojhas and elderly people of the area.

Keywords: Ailments, Ethno-botanical, Medicinal plants, Tonk, Traditional medicine

Introduction

Tonk has a relatively isolated status in Rajasthan, it is cut off from modern lifestyle and practices and boasts of the legacy of a bygone era. From time immemorial, humans have utilized resources available around them in various ways to fulfill their basic needs such as food, clothing, shelter and as a cure for ailments from plants¹. Medicinal plants have been mentioned since ancient times for treatment of human ailments in the Rigveda and Atharvaveda. In India, the traditional system of medicine, Ayurveda along with Homeopathy and folklore medicine continue to play an important role in the healthcare system of the population by and large. Ethnobotany is the study of all aspects of relationship between man and plant resources. The term “Ethnobotany” was first used by Harshberger in 1895 to indicate plants used by aboriginals. The use

of medicinal plants as traditional medicines is well known in rural areas of many developing countries².

Tribal people of this area are poor and illiterate and mostly depend on plant wealth to meet their medicinal care. The tribals belonging to the minor communities are socially and economically among the least advanced. But they harbour a lot of knowledge on medicinal plants³.

Herbal remedies have attained much more popularity in the treatment of minor ailments due to increasing awareness of personal health maintenance through natural products. The traditional knowledge and health care system of Indian ethnic communities is rich and unique in the world⁴. Increasing awareness of the side effects of synthetic drugs has led to necessitated exploration of the efficacy of natural drugs, which led to the revival of

herbal treatments for a large number of diseases. Lately, the study of the diversity of medicinal plants used in the Ngadisari village of Indonesia, have raised the possibility of contributing towards the development of new plant-based drugs and improvement of the collective revenue of the local society⁵.

The traditional herbal knowledge is passed from generation to generation in the verbal form by hakeems, Ojhas and elders. Nowadays, younger generation have less belief in traditional medicine and are more attracted to the allopathic system of medicine. As a result, neither are they able to recognize the plants growing in their surroundings, nor do they know about the benefits thereof^{6,7}. Therefore the knowledge is often owned by tribal elders or traditional healers in the particular community or tribe⁸. It has been affirmed that ethno pharmacological survey is a fundamental step for the preservation of the local knowledge both for further scientific research and for the protection of endangered and endemic plants⁹.

Material and methods

Rajasthan is the largest state of India, located north westerly. It lies between 23°3' to 30°12' N latitude and 69°30' to 78°17' E longitude. It is divided into 33 districts, of which Tonk is located in the north eastern part of the state between 75° 19' E longitude and 25° 41' and 26° 34' N latitude. The total area of the district is 71945 sq. km. Tonk district of the state of Rajasthan is surrounded by Jaipur, Sawai Madhopur, Kota, Bundi, Bhilwara and Ajmer districts (Fig.1).

The climate of the district is generally semi-arid with mean temperature of 34° C. The district receives a moderate rainfall of 455mm annually. At present, Tonk district comprises of 7 tehsils and 6 panchayat samitis (Fig.2).

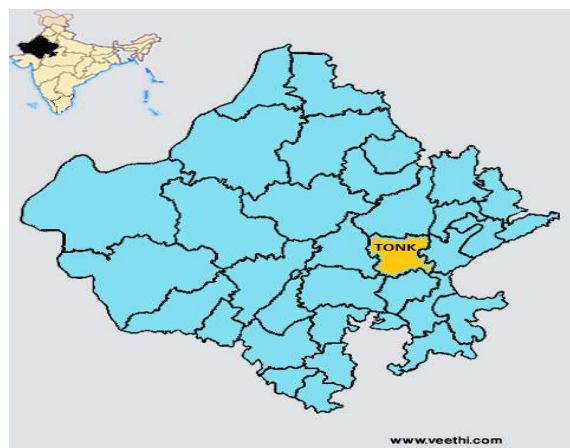


Fig.1: Map of India showing state of Rajasthan and position of Tonk. Source: www.mapsofIndia.com



Fig.2: Locational map of Tonk district, Rajasthan, India. Source: www.mapsofIndia.com

There exist a wide range of sophisticated techniques which may be used to investigate the relationship between plants and human beings and as the study of Ethnobotany is inherently multidisciplinary, the methodologies are extremely diverse.

For the purpose of collection and documentation of Ethnomedicinal plants of Tonk district, several field trips were conducted during the year 2019-20. The tribals and rural people were interviewed during this survey and collection and documentation of plants were made on these bases. Information about the local names, ethnomedicinal uses of plants for the treatment of various diseases, plant parts used as well as mode of treatments were recorded in a field diary. The dialogues and

discussion with tribals and local people regarding use of local flora in their daily life for disease treatment were also recorded. The data are based on first hand information gathered from the above mentioned people of Tonk district. During the survey, several interesting folk uses of plants were discovered. Tabulations including the local names, botanical names, plant organ used, ailment and medicinal properties of each plant were prepared.

A questionnaire was composed recording both qualitative and quantitative data containing information about medicinal uses from natives who were Vaidyas, Hakeem, Ojhas, priests and others. The herbarium of medicinal plant species were prepared¹⁰. A quantitative measurement of 200 randomly selected people was taken and information related to medical practices gathered. Collected plants were correctly identified with help of various literature¹¹⁻¹⁸.

Results and Discussion

A total of 95 species belonging to 77 genera and 51 families were identified to be ethno botanically important in Tonk district. Of the 95 species, 23 were herbs, 19 shrubs, 49 trees and 04 lianes. Different parts of the plants like roots, stem, bark, leaves, fruits, flowers etc. were used as sources of medicine by the locals and tribals. These are elucidated in Table 1.

The tribal / rural people of Tonk district do not run to doctors as and when they have any complaint but they take advice from elders and treat themselves with plant materials only. Anthropologists can gather more information on traditional culture and conservation of biodiversity and the sustainable use of plant resources. The inhabitants of all the seven tehsils of Tonk are well – versed with the symptoms of various diseases and their herbal remedies, as they have carried on traditional practice by verbal instruction.

Traditional methods cost less, are harmless and help in alleviation of sickness. Medicinal uses of plants have been confidently claimed by tribal / rural people. Although modern medicinal facilities are within approach, they prefer to use herbal drugs, owing to their confidence and belief in such treatment. The present work is focused on documentation and ethnomedicinal uses of plants. People are accepting indigenous Ayurvedic medicine system, which has no side effects. According to the WHO estimate, more than 80% of the people in developing countries depend on traditional and complementary medicine for their health needs¹⁹. Ayurvedic and Unani medicine is easily available with minimum cost, on consultation with vaidyas and hakeems.

There is scope of further surveys of wild plants resources with help of the local people to identify conservation issues and seek remedies²⁰. Categorization of the plants used by indigenous people around the country and analysis of compounds in medicinal plants in liaison with chemists may be pursued.

In conclusion, this study is important to preserve the knowledge of medicinal plants used by tribals and rural people of Tonk and is also of significance to exploit novel pharmacological agents in treatment of diseases.

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Table 1: Ethno medicinal plants of Tonk District, Rajasthan

S. No	Botanical Name	Family	Local Name	Habit	Plant part used	Diseases
1.	<i>Abutilon indicum</i> L.	Malvaceae	Pithri	S	L R St	Boils Piles Urinogenital disease
2.	<i>Acacia catechu</i> (L.f.) Willd.	Mimosaceae	Khair	T	B	Bronchitis Wounds & Itching Indigestion
3.	<i>Acacia nilotica</i> L.	Mimosaceae	Babool	T	F	Urinogenital disease
4.	<i>Acacia senegal</i> (L.) Willd.	Mimosaceae	Kheri	T	Gum Arabic	Dysentery Diarrhoea Leprosy
5.	<i>Achyranthes aspera</i> L.	Amaranthaceae	Andhijhora	H	Plant Ash R	Asthma Dysentery
6.	<i>Adhatoda vasica</i> (L.) Nees	Acanthaceae	Adusa	S	L	Dysentery Bronchitis Skin disease
7.	<i>Aegle marmelos</i> L.	Rutaceae	Bel	T	Unripe F B	Dysentery Diarrhoea Fever
8.	<i>Ailanthus excelsa</i> Roxb.	Simaroubaceae	Ardu	T	L	Skin disease
9.	<i>Alangium salvifolium</i> (L.f.) Wangerin	Cornaceae	Akol	T	Plant Ash	Wounds & Itching
10.	<i>Albizia lebbek</i> (L.) Benth.	Mimosaceae	Siris, Safeda	T	B & Fl	Bronchitis
11.	<i>Alhagi pseudalhagi</i> (Bieb.) Desv.	Fabaceae	Javasa	S	R L	Dysentery Diarrhoea Vomits Cholera Rheumatism
12.	<i>Allium cepa</i> L.	Liliaceae	Pyaz	H	Bulb	Joint pain
13.	<i>Allium sativum</i> L.	Liliaceae	Lahasun	H	Bulb	Earache
14.	<i>Annona squamosa</i> L.	Annonaceae	Sitaphal	T	R	Dysentery Diarrhoea Spinal disease
15.	<i>Anogeissus sericea</i> Brandis	Combretaceae	Dhoara, Safed dho	T	L	Fever
16.	<i>Argemone mexicana</i> L.	Papaveraceae	Satyanasi	H	St	Scabies
17.	<i>Asparagus racemosus</i> Willd.	Asparagaceae	Satgathia	H Climber	Tubers	Stomachic
18.	<i>Azadirachta indica</i> A. Juss.	Meliaceae	Neem	T	L Twigs B	Boils, Eczema Toothbrush Pyorrhoea, Skin disease
19.	<i>Balanites</i>	Zygophyllaceae	Hingot	T	Unripe F	Skin disease

	<i>aegyptiaca</i> Del.				Se	Whooping cough & Cold Colic
20.	<i>Barleria prionitis</i> L.	Acanthaceae	Bajradanti, (Neeli)	S	R L	Boils Toothache
21.	<i>Bauhinia racemosa</i> Lam.	Caesalpinaceae	Jhinjha, saintva	T	B	Scrofula
22.	<i>Bauhinia variegata</i> L.	Caesalpinaceae	Kachnar	T	Bu	Dysentery Diarrhoea
23.	<i>Boerhaavia diffusa</i> L.	Nyctaginaceae	Seanti	H	R	Dropsy Asthma
24.	<i>Boswellia serrata</i> Roxb.	Burseraceae	Salar	T	B	Whooping cough & Cold Indigestion
25.	<i>Bridelia retusa</i> (L.)A.Juss.	Euphorbiaceae	Kaljaria	T	R	Dysentery Diarrhoea
26.	<i>Butea monosperma</i> (Lam.) Taub.	Fabaceae	DhokPalas, Tesu,Chilla	T	L B Se B	Dysentery Diarrhoea Piles Menstrual disorder Herpes
27.	<i>Calotropis gigantea</i> (L.)W.T.Aiton	Asclepiadaceae	Safed aakra	S	L	Dysentery Diarrhoea
28.	<i>Calotropis procera</i> (Ait.)R.Br.	Asclepiadaceae	Aak	S	R,B	Leprosy
29.	<i>Cannabis sativa</i> L.	Cannabaceae	Bhang	H	L	Piles
30.	<i>Capparis decidua</i> (Forsk.)Edgew	Capparaceae	Karilor, Tainti	S	B F	Boils,Piles, Vomits Cardic pain & trouble
31.	<i>Cassia auriculata</i> L.	Caesalpinaceae	Anwal, Chal	T	Se	Skin &Eye disease
32.	<i>Cassia fistula</i> L.	Caesalpinaceae	Amaltas	T	B	Fever
33.	<i>Cassia tora</i> L.	Caesalpinaceae	Panwad	H	L	Skin disease
34.	<i>Celastrus paniculatus</i> Willd.	Celastraceae	Malkhanghi	Li	Se	Wounds & Itching Rheumatism
35.	<i>Citrus aurantifolia</i> (Christm. & Panzer)Swingle	Rutaceae	Kagchi neembu	T	F	Hemicrania
36.	<i>Citrus limetoides</i> Tanaka	Rutaceae	Meeta neembu	T	Se	Fever
37.	<i>Citrus limon</i> L.	Rutaceae	Gol neembu	T	F	Stomachic
38.	<i>Citrus medica</i> L.	Rutaceae	Lamba neebu	T	Ripe F R	Asthma Whooping cough & cold Colic

39.	<i>Clerodendron</i> sp Walp..	Verbenaceae	Arni	S	R	Gonorrhoea
40.	<i>Commelina benghalensis</i> L.	Commelinaceae	Kankua	H	Fl WP L	Piles Leprosy Skin disease
41.	<i>Commiphora wightii</i> (Arnott) Bhandari	Burseraceae	Gugal	S	Gum	Bronchitis
42.	<i>Cordia dichotoma</i> Forst.	Boraginaceae	Lasora	T	F L B	Urinogenital disease Mouth ulcers Fever
43.	<i>Cordia gharaf</i> Ascherson	Boraginaceae	Goondi	T	F B	Urinogenital disease Fever
44.	<i>Cuscuta reflexa</i> Roxb.	Convolvulaceae	Amarbel	H	Se	Liver troubles
45.	<i>Cynodon dactylon</i> (L.)Pers.	Poaceae	Dub	H	WP R	Dysentery Diarrhoea Dropsy Mouth ulcers, Hysteria Gonorrhoea
46.	<i>Datura metel</i> L.	Solanaceae	Datura	S	F	Dandruff
47.	<i>Datura stramonium</i> L.	Solanaceae	Makoh	H	L	Asthma
48.	<i>Diospyros melanoxylon</i> Roxb.	Ebenaceae	Tendu	T	F	Indigestion
49.	<i>Echinops echinatus</i> Roxb.	Asteraceae	Untkantela	H	R	Wounds & Itching
50.	<i>Erythrina indica</i> Lam.	Fabaceae	Gadha palas	T	B L	Dysentery Stomachic Urinogenital disease
51.	<i>Eucalyptus globulus</i> Labill.	Myrtaceae	Safeda	T	L	Respiratory tract problems
52.	<i>Eucalyptus tereticornis</i> Sm.	Myrtaceae	Safeda	T	L	Rheumatism
53.	<i>Euphorbia neriiifolia</i> L.	Euphorbiaceae	Thor	S	Latex	Toothache
54.	<i>Ficus benghalensis</i> L.	Moraceae	Bargad, Bad	T	B Latex	Dysentery Diarrhoea Lumbago Rheumatism
55.	<i>Ficus religiosa</i> L.	Moraceae	Peepal	T	B	Skin disease Mouth ulcers
56.	<i>Gardenia turgida</i> Roxb.	Rubiaceae	Chamakra	T	F	Dysentery Diarrhoea
57.	<i>Grewia flavescens</i> Juss.	Tiliaceae	Kali siyali, Chaprayan	T	F R	Dysentery Diarrhoea Urinogenital disease
58.	<i>Gymnema sylvestre</i>	Asclepiadaceae	Gudmaar	Li	L	Asthma Eye trouble

	(Retz.)R.Br.					
59.	<i>Helicteres isora</i> L.	Malvaceae	Madodfali	T	F	Stomachic
60.	<i>Holarrhena</i> <i>antidysenterica</i> L.	Apocynaceae	Dudhi	T	St, B	Dysentery Diarrhoea
61.	<i>Holoptelea</i> <i>integrifolia</i> Planch.	Ulmaceae	Churel	T	B	Scabies Wound & Itching
62.	<i>Ichonocarpus</i> <i>frutescens</i> (L.)W.T.Aiton	Apocynaceae	Bonwarbel	Li	R	Hysteria
63.	<i>Lannea</i> <i>coromandelica</i> (Houtt.)Merr.	Anacardiaceae	Gurjan	T	B	Wounds & Itching
64.	<i>Lantana camara</i> L.	Verbenaceae	Lantana	S	WP	Vermifuge, Woun ds & Itching
65.	<i>Lawsonia inermis</i> L.	Lythraceae	Mehndi	S	L	Jaundice
66.	<i>Lepidagathis</i> <i>trinervis</i> Nees	Acanthaceae	Siyalbethna	S	WP	Piles
67.	<i>Mallotus</i> <i>philippensis</i> (Lam.)Müll.Arg.	Euphorbiaceae	Rohini	T	B,L	Wounds & Itching
68.	<i>Mangifera indica</i> L.	Anacardiaceae	Aam	T	L Se	Dysentery Diarrhoea Asthma
69.	<i>Martynia annua</i> L.	Martyniaceae	Bicchu	H	L	Sore throat, Epilepsy
70.	<i>Nyctanthes arbor-</i> <i>tristis</i> L.	Oleaceae	Sihri, Harsingar	S	F	Whooping cough & Cold
71.	<i>Ocimum canum</i> Sims.	Lamiaceae	Vantulsi, Vapchi, Kali tulsi	H	Se L R	Urinogenital disease Bronchitis, Catarrh, Stomachic Fever
72.	<i>Ocimum sanctum</i> L.	Lamiaceae	Tulsi	H	L	Fever, Sore throat
73.	<i>Opuntia dillenii</i> Ker Gawl.	Cactaceae	Nagnithor	S	F	Whooping cough & cold
74.	<i>Pandanus</i> <i>fascicularis</i> Lam.	Pandanaceae	Kevira	T	WP	Rheumatism
75.	<i>Pennisetum</i> <i>typhoides</i> (Burm.)Stapf et Hubb.	Poaceae	Bajra	H	WP	Heat appetizer
76.	<i>Phoenix sylvestris</i> L.	Arecaceae	Khajoor	T	R	Toothache
77.	<i>Pongamia pinnata</i> (L.)Pierre	Fabaceae	Karanj	T	B Se L	Piles Skin disease, Herpes Mouth ulcers

78.	<i>Prosopis juliflora</i> (Sw.)DC.	Mimosaceae	Vilayti khejra	T	F	Dysentery Diarrhoea
79.	<i>Ricinus communis</i> L.	Euphorbiaceae	Arand	S	R	Lumbago Snake bite
80.	<i>Rivea hypocrateriformis</i> (Desr.)Choisy	Convolvulaceae	Phang	Li	R	Stomachic
81.	<i>Salvadora oleoides</i> Decne.	Salvadoraceae	Peelu, Jaal	T	F	Rheumatism
82.	<i>Solanum nigrum</i> L.	Solanaceae	Makoi	H	F	Cardiac troubles
83.	<i>Solanum surattense</i> Burm.f.	Solanaceae	Bhurangini	H	R F	Asthma Cough Sore throat
84.	<i>Sterculia urens</i> Roxb.	Sterculiaceae	Kadaya	T	Gum	Sore throat
85.	<i>Stereospermum suaveolens</i> (Roxb.)DC.	Bignoniaceae	Rilu, Padar	T	R	Snake bite
86.	<i>Syzygium cumini</i> (L.)Skeels	Myrtaceae	Jamun	T	L	Diarrhoea
87.	<i>Tamarix aphylla</i> (L.)H.Karst.	Tamaricaceae	Farash	T	Galls B	Eczema
88.	<i>Tamarix dioica</i> Roxb.ex Roth	Tamaricaceae	Jhau	S	Galls	Leprosy
89.	<i>Tamarindus indica</i> L.	Caesalpinaceae	Imli	T	B	Dysentery Diarrhoea
90.	<i>Tephrosia purpurea</i> (L.)Pers.	Fabaceae	Dhamasa	H	WP R F	Boils Dysentery Diarrhoea Urinogenital disease Asthma Rheumatism Vomits Vermifuge
91.	<i>Tinospora cordifolia</i> (Thunb.)Miers	Menispermaceae	Neem giloy	H	S	Fever
92.	<i>Tribulus terrestris</i> L.	Zygophyllaceae	Gokharu	H	R	Stomachic
93.	<i>Xanthium strumarium</i> L.	Asteraceae	Andha Sishi	H	WP	Fever
94.	<i>Ziziphus mauritiana</i> (L.)Lam.	Rhamnaceae	Pemli ber, Vagau ber	T	Se	Dysentery Diarrhoea
95.	<i>Ziziphus nummularia</i> Burm.f.	Rhamnaceae	Jhar ber	S	Burnt smoke inhaled L	Whooping cough & cold Scabies, Ophthalmia

Key: H=Herb, S=Shrub, T=Tree, Li=Liana, R=Root St=Stem, B=Bark, L=Leaf,
Bu= Bud, Fl=Flower, F=Fruit, Se=Seed, WP=Whole Plant

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