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Studies on the Threatened Ethnomedicinal Plants Used by Tribals of Harda District of M.P., India

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Abstract: ***Harda district is situated in the eastern part of Madhya Pradesh and boast of good species richness. Ethnobotanical survey was carried out to document the information of medicinal plants used by people living in rural and remote areas of Harda district of Madhya Pradesh during 2011-2014.The district is bounded by Vindhyan ranges in south and Narmada River in north. This region is inhibited by tribal communities like Bhil, Bhilala, Gond and Korku. Tribal communities used these plant species by traditional way and its practitioners known as Barwa from the primary health care provider in rural areas. Present study records a total of 65 species, 62 genera and 43 families which are used in 19 different types of diseases like fever, diarrhea, dysentery, piles, skin disease, rheumatism, joint pain, bone fracture, cuts, wounds, healings, asthama, bronchitis, cough, pneumonia, snake bite, gynecological, abortifacient, stomache and intestinal disorder, memories, after delivery for strengthening, cardiac disease, kidney trouble, urinary diseases, boils, male erectile disinfection, antisterility and jaundice etc. Some Ethnomedicinal plants are Helicteres isora L., Pterocarpus marsupium Roxb. Sarcostemma acidum (L.) R. Br., Clerodendrum serratum (L.) Moon, Costus speciosus (J. Koening.) J.E. Sm., Ampelocissus latifolia (Roxb.) planch, Chlorophytum borivilianum L., Tinospora cordifolia (W.) Miers. Ex. Hook, Urginea indica (Roxb) Kunth, etc.***

Keywords: Harda, Vindhyan ranges, Narmada River, threatened Ethnomedicinal plants, Barwa.

1. Introduction

Harda district is situated in the eastern part of Madhya Pradesh. It lies in between 21^0.53' and 22^0.36'N longitude and 76^0.47' and 77^0.20' E Latitude. The total geographical area of the district is 3330 sq. km. out of which forest area is 2643 sq.km. The district is bounded by Satpura ranges in the North. The district is covered by Satpura Mountains in the south and extension of Malwa plateau. The study area is mainly drained by Narmada River and its tributaries are Ganjal, Ajnal, Sukni, Midkul, Dendra, Machak, Syani and Kali Machak rivers. Tropical dry deciduous forest is the characteristic feature of the study area. Dominant tribes in habiting the area are Korku, Gond, Bhils, and Bhilala. The normal rainfall of Harda district is 1124.2 mm

In the recent years there has been increasing interest in floristic study and Ethnobotanical studies in particular. Ethnobotany deals with the relationship between human societies and plant used in curing the ailments. Medicinal plants are nature's gift to mankind and are rich ancient heritage of India. About 8,000 plants are recognized as medicinal plants that are being used by various traditional systems of medicine such as Ayurveda, Homopathi, Sidha, folk and Unani. In India, it is reported that traditional healers use 2500 plant species and 100 species of plants serves as regular sources of medicine (Sripathi et al.2010).

2. Material and Method

The ethno botanical exploration was carried out during the 2011-2014 to document the information of medicinal plants. Field trips were organized in different tribal villages and forest areas. The information on medicinal herbal recipes used by the tribal for curing different ailments is gathered through interviews with the tribal medicine men called Barwa and local experience medicine man and expert person and question asked to gather data for this purpose. Each of the plant material was collected and documented. The information has been collected from reliable and authentic sources. The plant specimens are dried and pressed to prepare herbarium. The herbarium prepared by standard method (Jain and Rao 1977).The collected plant specimens were identified by using flora and other pertinent literature (Hooker 1872-1897; Roy 1984; Mudgal, et al.1997; Singh, et al.2001; Hains 1924). Specimens were deposited at PMB Gujarati Science College Indore Madhya Pradesh. The information about the plant, part used, Disease, Local name and family name is given.

3. Result and Discussion

Present study records a total of 63 plants species which are found to be used in the treatment of fever, dysentery and diarrhoea, piles, skin diseases, rheumatism, bone fracture, cuts, wounds healing, cough, pneumonia, bronchitis, asthma, gynecological and abortifacient, snake bite, insect bite, stomachache and intestinal disorder, memories, jaundice, cardiac diseases, kidney trouble, urinary diseases, boils, male weakness and antifertility diseases (**Table-1**). Different plant parts are used for curing different diseases. Root of 16 plant species, leaves of 14 plant species, stem of 8 plant species, flower of 4 plant species ,Fruit of 6 plant species ,Wood and bark of 4 plant species , and Seed of 3 plant species are used to cure different diseases **(Fig.-1).**Single plant species is used for specific ailment or multifarious uses of plants have been observed.

These medicinal plants are used by rural people and tribal communities residing in remote area. This knowledge of medicinal plants is becoming vanished as there is no written material. These were only handed over orally from generation to generation. Some medicinal plants are vanishing in alarming rate due to over exploitation, harvesting, trade value, grazing, industrialization and urbanization, Road construction, clearing of forest for agriculture, Megaprojects, anthropogenic influences. These plants are categorized as per IUCN (Table-1). A total of 31

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threatened plants species have been listed (Table -1) in Harda district of Madhya Pradesh of which two species are under Critically endangered category, eight plant species are recorded under Endangered category, 13 plant species are found under vulnerable category, 08 plants species are observed under Near threatened category.

Critically endangered (CR): A taxon is critically endangered when it is facing an extremely high risk of extinction in the wild in the immediate future. *Leea macrophylla Roxb. Ex. Hornem. Geodorum densiflorum (Lam.) Schl. come under this category.*

Endangered (EN):A taxon is endangered when it is not critically endangered but is facing a very high risk of extinction in the wild in the near future. The following eight taxa come under this category. *Pterocarpus marsupium Roxb., Sarcostemma acidum L., Costus speciosus (J. Koening) J. E .Sm., Uraria picta (Jacq.) Devs. Ex. DC, Croton tiglium L.,Chlorophytum borivilianum L., Plumbago zeylanica L., Urginea indica (Roxb.)Kunth.*

Vulnerable (Vu): A taxon is vulnerable when it is not critically endangered or endangered but is facing a high risk of extinction in the wild in the medium future. The following species come under this category. *Tinospora cordifolia (W.) Miers. Ex. Hook, Andrographis paniculata (Brum. f.) Wal. Ex. Nes.,Asparagus racemosus Willd., Curculigo orchioides Gaertn., Clerodendrum serratum (L.) Moon., Trichosanthes cucumerina L., Chlorophytum tuberosum (Roxb.)Baker., Curcuma angustifolia Roxb., Psoralia corylifolia* ***L.,*** *Capparis decidua (Forsk.)Edgew, Flacourtia indica (Burm. F.)Merr., Casearia elliptica Willd., Cleome viscosa L.*

Near threatened (NT): *Boerhavia diffusa L., Echinops echinatus Roxb. Solanum nigrum L., Helicteres isora L., Hemidesmus indicus (L.) R. Br., Mucuna puriens (L.) DC, Enicostema axillare (Lam.) A., Cocculus hirsutus (L.) Diels,* species come under this category.

Table 1: Threatened Medicinal plants

Botanical name	*Local name*	*Family*	*Medicinal use*	*Status*
Abelmoscus moschatus Medic.	Jangli bhindi	Malvaceae	Root powder is given for Abortifacient	LC
Abrus precatorious L.	Ratti	Papilionaceae	Root paste is applied in cuts	LC
Abutilon indicum (L.) Sweet.	Kanghi	Malvaceae	Root juice is given for Abortifacient	LC
Acacia nilotica (L.) Willd ex. Del.	Babul	Mimosaceae	Pod powder is given in piles	LC
Achyranthes aspera L.	Hathijaro	Amaranthaceae	Root paste is applied in cuts	LC
Aegle marmelosa (L.) C. Orea	Bel	Rutaceae	Fruit is eaten in Diarrhea	LC
Aloe vera L.	Guwarphata	Liliaceae	Leaves paste is applied on cuts	LC
Alysicarpus tetragonolbus Edge.	Sevro	Papilionaceae	Stem juice is used in Rheumatism	LC
Ampelocissus latifolia (Roxb.) planch	Panibel	Vitaceae	Root juice is given in Snake bite	LC
Andrographis paniculata (Brum. f.)Wal. Ex. Nes.	Kirayta	Acanthaceae	Leaf juice is given in fever	VU
Argemone mexicana L	Katlasha	*Papaveraceae*	Stem latex is applied on cuts	LC
Asparagus racemosus Willd.	Satawari	Liliaceae	Root is used as tonic	VU
Bacopa monnieri (L.) Wetlst	Jalneem	Scrophulariaceae	Leaf powder is given for memory increase	LC
Barleria montana L.	Haldibel	Acanthaceae	Root paste is applied in Joint pain	LC
Biophytum sensitivum (L.) DC	Rajal	Oxalidaceae	Root powder is given in Diarrhea and Dysentery	LC
Boerhavia diffusa L.	Punarnav	Nyctaginaceae	Root powder is given in Kidney problem	NT
Butea monosperma (Lamk.)Taub.	Palash	Fabaceae	Seed is applied on Snake bite	LC
Calotropis procera (Aiton) R.Br.	Aakda	Asclepidaceae	Hollow stem having Jira used as smoke to cure Asthma	LC
Capparis decidua (Forsk.)Edgew	Karil	Capparidaceae	Seed powder is given in Snake bite	VU
Casearia elliptica Willd.	Kirchi	Flacourtiaceae	Root powder is given after delivery for strengthening	VU
Cassia fistula L.	Amaltas	Caesalpinaceae	Pod paste is eaten in piles	LC
Chlorophytum borivilianum L.	Musali	Liliaceae	Root powder is used as a tonic	EN
Chlorophytum tuberosum (Roxb.)Baker	Dawali Musali	Liliaceae	Root powder is given after delivery for strengthening	VU
Cleome viscosa L.	Chipakaniyo	Cleomaceae	Root powder is given in boils	VU
Clerodendrum serratum (L.) Moon	Barangi	Verbenaceae	Root powder is given in cough	VU
Clitoria ternatea L.	Supadi	Papilionaceae	Seed powder with honey is used for memory increase	LC
Cocculus hirsutus (L.) Diels	Wachaniyo	Menispermaceae	Stem juice is given in Gynecological Problem	NT
Convolvulus arvensis L.	Bilrihara	Convolvulaceae	Flower powder is used for memory increase	LC
Costus speciosus (J.koen.) J.E.Sm.	Kevkand	Costaceae	Tuber powder is given cough	EN
Crinum latifolium L.	Sudarshan	Amaryllidaceae	Bulb juice is given for Antisterility	LC
Croton tiglium L.	Jamalghota	Euphorbiacae	Seed powder is given in intestinal disorder	EN
Curculigo orchioides Gaertn.	Kalimusali	Hypoxidaceae	Rhizome paste is applied on healing	VU
Curcuma angustifolia Roxb.	Tikhur	Zingiberaceae	Tubers extract is given in Diarrhea	VU
Cuscuta reflexa Roxb.	Amarbel	Cuscutaceae	Stem juice is given in jaundice	LC
Cyperus rotundus L.	Nagarmotha	Cyperaceae	Tubers powder is given in Dysentery	LC
Desmodium triflorum(L.)DC	*Kudaliya*	Papilionaceae	Leaf juice is given in Diarrhea	LC
Echinops echinatus Roxb.	Ootkanta	Asteraceae	Root powder is given in Gynecological Problem	NT

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Enicostema axillare (Lam.) A.	Nai	Gentianaceae	Dried leaf powder is given in morning for good health & fever.	NT
Evolvulus alsinoides (L.) L.	Sankpuspi	Convolvulaceae	Leaf powder is given in Bronchitis	LC
Flacourtia indica (Burm.f.)Merr.	Kakai/Kaju	Flacourtiaceae	Leave juice is given in Snake bite	VU
Geodorum densiflorum (Lam.) Schl.	Kukarkand	Orchidaceae	Bulb juice is given for Antisterility	CR
Grewia abutilifolia Vent .ex. Juss.	*Chikankathi*	Tiliaceae	Fruit is eaten and leaf paste is used for cooling	LC
Helicteres isora L.	Morodfali	Starculaceae	Fruit powder is given in Diarrhea	NT
Hemidesmus indicus (L.) R.Br	Anantmul	Asclepidaceae	Root paste is applied in Joint pain	NT
Holarrhena pubescens (Buc.Ham.)Wal. G. Don.	Kurchi	Apocynaceae	Bark extract is given in Diarrhea	LC
Leea asiatica L.	Hatikan	Leaceae	Flower paste is applied on wounds	LC
Leea macrophylla Roxb. ex. Hornem.	Hatikan	Leaceae	Root paste is applied in skin disease	CR
Mucuna puriens (L.) DC	Kounch	Papilionaceae	Leaf paste is applied on skin for cooling	NT
Oxalis corniculata L.	Khato panto	Oxalidaceae	Root powder is given in Stomach ache	LC
Plumbago zeylanica L.	Chitrak	Plumbaginaceae	Root powder is given in Cardiac disease	EN
Psoralia corylifolia	Bavachi	Papilionaceae	Root paste is applied in skin disease	VU
Pterocarpus marsupium Roxb.	Bijasal	Papilionaceae	Bark extract is given in Diarrhea and Dysentery	EN
Pueraria tuberosa (Rox.ex.Wil.)DC	Vidari kand	Papilionaceae	Root powder is given in Urinary disease	LC
Sarcostemma acidum (L.) R.Br.	Samarbel	Asclepidaceae	Stem paste is applied in Bone fracture	EN
Solanum nigrum L.	Makoi	Solanaceae	Leaf paste is applied on skin for cooling	NT
Terminalia cuneata L.	Arjun	Combritaceae	Bark extract is given in Cardiac disease	LC
Tinospora cordifolia (W) Mier. Ex Hook.	*Gudbel*	Menispermaceae	Stem juice is given in fever	VU
Tribulus terrestris L.	Gokharu	Zygophyllaceae	Leaf juice is given in intestinal disorder	LC
Trichosanthes cucumerina L.	Kanduri	Cucurbitaceae	Rhizome powder is given in Pneumonia	VU
Tridax procumbens L.	*Baramdandi*	Compositae	Leaves paste is applied on cuts	LC
Typha angustata L	Pandal	Typhaceae	Inflorescences paste is applied in cuts	LC
Uraria picta (Jacq.) Devs. ex. DC	Dubra	Papilionaceae	Root paste is applied on Snake bite	EN
Urginea indica (Roxb.)Kunth.	Jangli kando	Liliaceae	Bulb juice is given in male erectile disinfection	EN
Vitex negundo L.	Nirgundi	Verbenaceae	Leaf paste is applied on Joint pain	LC
Woodfordia fruticosa (L.) Kurz.	Banmahendi	Lytharaceae	Flower paste is applied on lucoderma	LC

Abbreviation: C=Common, VU= Vulnerable, CR= Critically Endangered, EN= Endangered, NT= Near threatened, LC = Least concern

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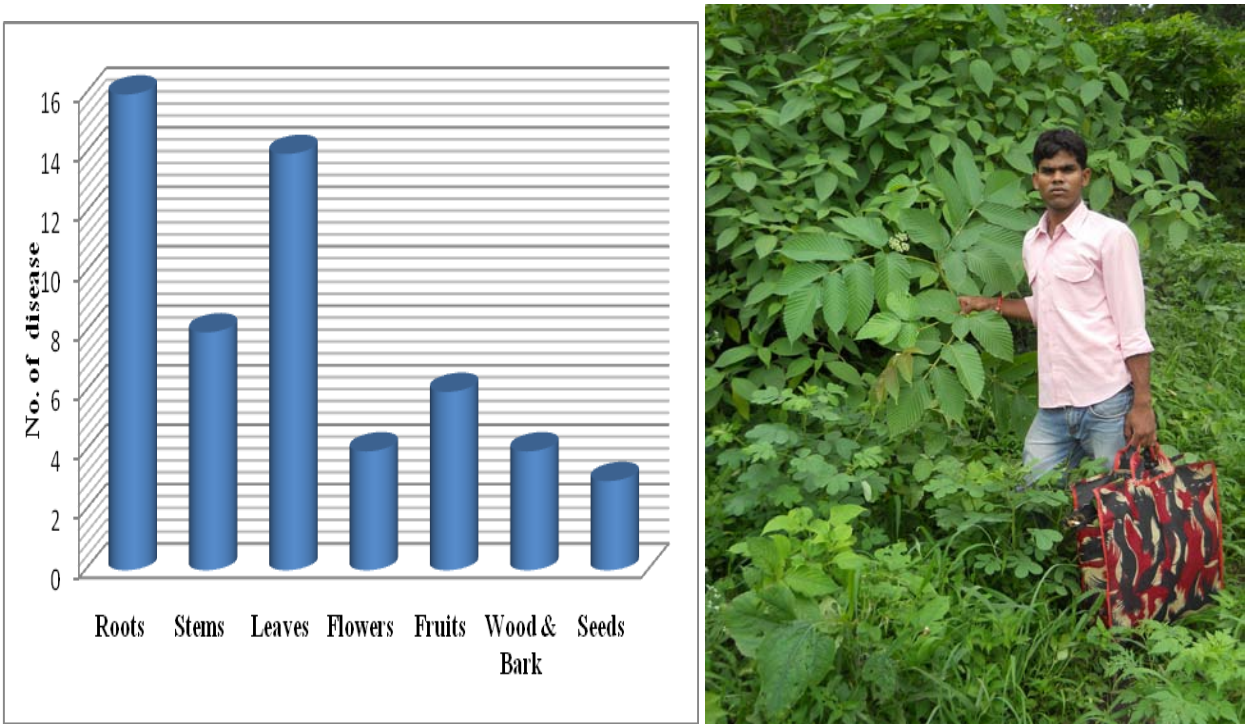


Figure 1: Different plant parts used in different diseases Informants showing *Leea asiatica (L.) Ridsdale*



Sealing of ethnomedicinal plants Sealing of ethnomedicinal plants

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