



Folk-lore uses of *Guizotia abyssinica* (L.F) Cass. among tribal and rural people of Madhya Pradesh

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Research Article

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Abstract

Madhya Pradesh sustains a very rich traditional medicinal plant wealth and inherits unique plant and animal communities. *Guizotia abyssinica* (L.f.) Cass. Belonging to family Asteraceae (Compositae), commonly known Niger, black seed (E) Ramtil, Kalatil (H). It is an erect, stout, branched annual herb, grown for its edible oil in many parts of Madhya Pradesh. The objective is to collect scattered scientific information of the herbs used by the tribal and rural people of Madhya Pradesh. Field and survey work was made after carefully planned trips to collect the folk lore uses of the selected plant species by the tribal and rural people of Madhya Pradesh. The claims were gathered by interviewing the tribal and rural people of the study area. The present paper enumerates folk-lore uses of the plant by the tribal and rural people of Madhya Pradesh. It has been found that the plant has been used in the treatment of rheumatism, cough, burn, syphilis and other associated microbial disease. Attempts were made to verify the efficacy of claims with actual beneficiaries, although this was not possible in all cases due to social customs. Hence, it was realised that the selected species have diversified medicinal uses as ascertain by its folk lore.

Keywords: *Guizotia abyssinica*, Folk-lore, Tribes, Madhya Pradesh

Introduction

Medicinal plants have always been the principle source of medicine in India since ancient past and presently they are becoming popular throughout the developed countries. Besides, they also play an important role in the lives of tribal and rural people, particularly in remote part of developing countries. Obviously, these plants help in alleviating human suffering. The ethnic and rural people of India have preserved a large bulk of traditional knowledge of medicinal uses of plants growing around them. This knowledge is handed down to generations through word of mouth and is extensively used for the treatment of common diseases and conditions. The indigenous method of preparation maintains the purity of the drug. Furthermore, traditional folk healers treat with kindness, grace, patience and tolerance, which play a vital role in healing process today.¹ During the present investigation it has been found by the authors that there are number of plants which are used by the ethnic and rural people of the region in curing various ailments and till date no any proper documented work has been performed in the selected species in the study area with proper citation and hence the present work was conceived by us to explore the hidden uses and to conserve the species.

Guizotia abyssinica (L.f.) Cass. Syn. *G. oleifera* D.C., *Polymnia abyssinica* L.f., Suppl., *Verbesina sativa* Roxb., *Jaegeria abyssinica* Spr., commonly known as Ramtil (H) and Niger (E) belongs to family Asteraceae. It is native of Abyssinica (South Africa). It is cultivated widely as an oil seed crop in India, Ethiopia, Abyssinica and parts of East Africa. In India, it is grown extensively in Madhya Pradesh, Hyderabad, Orissa, Bombay and Mysore and to some extent in Bihar, Madras and Vindhya Pradesh. It is an erect, stout, branched annual herb, grown for its edible oil and seed. Its cultivation originated in the Ethiopian highlands, and has spread to other parts of World. The seed, technically a fruit called an achene, is often sold as bird feed. The leaves are arranged on opposite sides of the stem. At the top of the stem leaves are arranged in an alternate fashion. Leaves are 10-20 cm long and 3-5 cm wide.



The leaf margin morphology varies from pointed to smooth and leaf colour varies from light green to dark green, the leaf surface is smooth. Flower is yellow and, rarely, slightly green. The heads are 1.5-5 cm in diameter with 0.5-2 cm long ray florets. Two to three flower-heads grow together, each having ray and disk florets. The receptacle has a semi-spherical shape and is 1-2 cm in diameter and 0.5-0.8 cm high. The receptacle is surrounded by two rows of involucre bracts. The head consists of six to eight "petals" (fertile female ray florets). The disk florets, usually 40-60 per flower-head, are arranged in three whorls. The disk florets are yellow to orange with yellow anthers, and a densely hairy stigma.²

The plant is used by the various tribal communities of India in the treatment of various disease and disorders, keeping this view the present work was conceived to explore the folk lore and traditional uses of this plant.

Material and Method

The plants were collected by the investigator from the different study sites of Madhya Pradesh viz., Vindhya Region, Malwa Region, Budelkhand Region and Nimar Region during month of July-2011 to December-2011. Extensive survey work was made after carefully planned field trips (as per method adopted by Dwivedi 2003)³. During the field trip personal interview was made between the author and tribes of the region.

The ethnomedicinal and folk lore uses of the plant were collected from the local informants selected. The present investigation was carried out by well designed questioner⁴⁻⁵ as suggested and validated by Dr. S. N. Dwivedi, Prof., Head & Principal Investigator, Department of Botany, Janata College, A.P.S. University. The survey was based on open ended questions. The questioner tool was well discussed with tribal and other people in their local language. The plant was identified by Dr. (Mrs.) Neeta Singh, Prof. and Head, Department of Botany, Govt. Girls PG College, A.P.S. University, Rewa, M.P. and are deposited in our Laboratory, Voucher specimen No. PCog/GA/0914. Data regarding conservation were made as per plan suggested.⁶⁻⁷

Study Area

The present investigation has been carried out in the 32 remote places of Madhya Pradesh (Table 1), (Fig. 1 & 2) scattered over four regions. For a proper and orderly study, the study sites were selected considering the population and density of selected species. The local informants selected was Village farmers, Old persons, Hakims, Vaidhayas, Tribes, Peoples working on field, Ayurvedic doctors and Experts in the field of Herbal Medicine.

S/No.	Region	Remote Places	No. of Sites Visited	Visited Area
1.	Vindhya Region	Rewa, Satna, Sidhi	6	110 km
2.	Malwa Region	Indore, Dewas, Shajapur	9	150 km
3.	Budelkhand Region	Sagar, Mandla, Jabalpur, Panna	10	90 km
4.	Nimar Region	Khargone, Dhamnoad, Dhar	7	80 km

fig 1: Location map of Madhya Pradesh in India

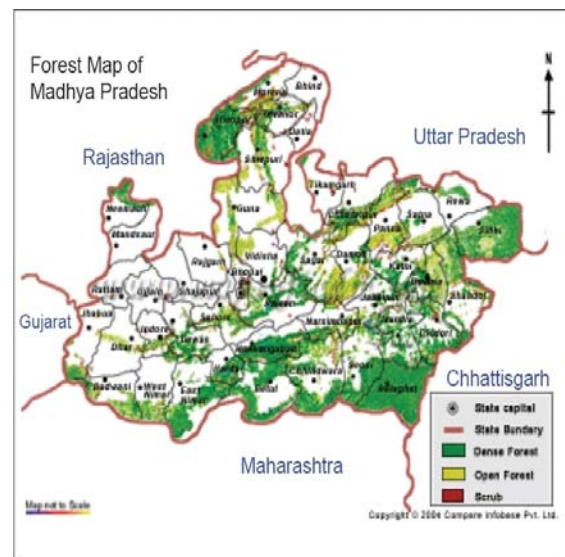


fig 2: Forest map of Madhya Pradesh folk-lore uses



Direct discussion between the authors and different informants were made and the uses of the plant was recorded (Table 2).

Table 1: Selected study area of Madhya Pradesh



Status

The status of the species of the study area has been established and author tried to gather the information as per method suggested.⁶⁻⁷ (Table 2).

Table 2: Observation of questioner tool for *Guizotia abyssinica* (L.f.) Cass. from selected study sites of Madhya Pradesh

S/No.	Tools of Investigation (Questioner)	Inference			
		Vindhya Region	Malwa Region	Budelkhand Region	Nimar Region
1.	LN	Ramtil	Ramtil	Ramtila	Kalatil
2.	PU	Seed, Leaves, Root	Root, Leaves	Seed, Stem, Leaves	Seed
3.	D	Rheumatism, burns, birth control	Scabies	Rheumatism arthritis, Syphilis, Cough	Microbial infection
4.	MOP	The leaf and root thick paste was made with water and applied at joint for treatment of burns and rheumatism arthritis. For birth control seed are used. Seed oil is also applied for healing after burns.	-	Thick paste of stem along with leaf was applied at joint for treatment of rheumatism arthritis. Decoction of seed or leaves was used. Sprouted seeds were mixed with garlic and are used to treat coughs.	Seed pastes and seed oil were applied to treat the microbial infection.
5.	FD	OD up to 15 days	-	BD, For cough, TID	BD, SOS
6.	SS	R	EN	C (under cultivation), CE	EN
7.	Conservational strategies	In-situ and Cultivation	In-situ & Ex-Situ	Cultivation in fields	In-situ & Ex-Situ

Abbr. I=Informants, LN= Local Name, PU= Part Used, D=Disease, MOP=Method of preparation, FD=Frequency of administration of medicine, SS=Status of species, CS=Conservational strategies, OD=Once in a day, BD=Twice in a day, TID=Thrice in a day, SOS=As required, R=Rare, EN=Endangered, C=Common, CE=Critical Endangered

Conservation Strategies

Conservation strategies of biodiversity with special reference to threatened herbs have been adopted as mentioned by the tribes of the study area. The works of eminent scholars have been referred for this purpose⁶⁻⁷. The conservation strategies of the plants are mentioned (Table 2).

Results and Discussion

In every ethnic group there exists a traditional health care system, which is culturally patterned. In rural communities health care seems to be the first and foremost line of defence. The WHO has already recognized the contribution of traditional health care in tribal communities. In the present work authors have collected and gathered the hidden information of *Guizotia abyssinica* (L.f.) Cass. from different study sites of Madhya Pradesh in 32 remote places (Table 1). It elicits on all the aspects of the herb and throws the attention to set the mind of the researchers to carry out the work for developing its various formulations, which can ultimately be beneficial for the human beings as well as animals. During the course of present investigation a well documented survey with

the approved questioner viz., informants, local name, part used, status of species, disease, method of preparation and frequency of administration of medicine, was designed to explore the folk lore of the herb. It was concluded from present work that the herb is locally known as ramtil and various part such as root, leaves, stem, seed and seed oil were

used in the treatment of various diseases viz., microbial infection, burns, cough, contraceptives, arthritis and syphilis by the various informants selected in different doses and duration along with specific method of preparation (Table 2). Further the status of the species was also recorded which conclude that the species is very rare and going to endangered in almost all the study sites, except budelkhand region where the species is still cultivated by the farmers therefore, there is urgent need of conservation of the species. Hence, it was concluded from the present wok that the selected species of *Guizotia* is very useful in the treatment of certain kind of disease and various ex and in-situ conservation strategies along with cultivation of species may be adopted to prevent the species from extinction.

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of questionnaire. Thanks are also due to the informant of the study area for lucid discussion and completing the questionnaire.

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AUTHORS' CONTRIBUTIONS

Authors contributed equally to all aspects of the study.

PEER REVIEW

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CONFLICTS OF INTEREST

The authors declare that they have no competing interests