

ANALYSIS OF ETHNOBOTANICAL RESEARCH ON TRADITIONAL MEDICINAL PLANTS

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Abstract

This article offers a thorough examination of the ethnobotanical data discovered in and around the Indian Aravalli area. The Aravalli region has a long history of using these healing plants to cure many human illnesses. By conducting a thorough and well-organized review of the data gathered from the local residents (i.e., natives, tribal groups, and elders who are knowledgeable about the plant species grown in their region), this paper aims to investigate the various plant species with ethnobotanical significance. Because natural vegetation and backyard gardens were the main sources of plant species, we may infer their inherent characteristics using inferred analysis. The most often used plant species were herbs, followed by trees. Leaves and roots were the two materials that were most common. The most popular preparatory technique was crushing. The most common routes of medication delivery were oral and cutaneous. A considerable number of medicinal plants are in danger due to drought that follows agricultural growth. The majority of medicinal plants that were marketed on the market were used for non-medical uses. In order to fully exploit plants endowed with an abundance of secondary metabolites, this knowledge of a plant's ethnomedical value is being passed on to the next generation.

KEYWORDS

Ethno botany; Medicinal Plants; Gujarat; Aravalli District; Tribal Communities

INTRODUCTION

In addition to its riches in species variety, India is among the countries with the most diverse environments, which preserves many indigenous species. But to ensure the long-term preservation of this biodiversity, meticulous inventory and management of

this unique biological resource are necessary. Modern ayurvedic and unani literature has also added to our knowledge of plant-based therapies. Due to the exceptional variability in its geophysical and climatic conditions, Gujarat has one of the highest levels of biodiversity among Indian states. The state of Gujarat has over 2300 species of vascular seed plants, including four gymnosperms, distributed among 921 genera and 162 families. Both of these plants are indigenous to the area and have spread out or been more intensively farmed.

Around 600 scientific contributions have been made, including regional and state-level floras (Bole et al., 1988), research articles published in taxonomic periodicals, and Ph.D. theses submitted to different institutions (Patel, 1971; Shah, 1978). Furthermore, comprehensive studies that take into consideration the floristic features of the state, such as checklists and collections of Biodiversity studies (Pandey et al., 2008). However, none of the aforementioned extravagant floral creations fully reveal the subject area of the present study.

When modern civilization realized that all of the plant products used as food or medicine were a gift from the early men who used those plants to sate their hunger, treat their injuries, and learn about and evaluate their utility for plants frequently

experimented on their own bodies, occasionally also unintentionally suffering as a result of its use, as in the case of the use of the opium poppy. The image below depicts the "Tree of Ethnobotany."

METHODOLOGY EMPLOYED

Study area

The Aravalli region has a wealth of floristry and ethnobotany expertise. Patel (2002) did little ethnobotanical study in a few Aravalli district locales. These people might basically be classified as belonging to a sect that has adapted to the local environment. It was thus considered that these tribal, rural people had a unique use for ethnobotany. By examining how rural and tribal people's understanding of the surrounding environment influences their relationships with and usage of plants, an interdisciplinary approach has been made an effort. The Aravalli region served as the study's research site.

Observation

Observations were conducted of the cultures, structures, agricultural boundaries and fences, food gathering techniques, family chores, and daily objects at the village and hut levels. The following three situations were used to conduct plant-based interviews: Plants were collected and brought to the headman's home, the camp, or another appropriate site where tribe members were interrogated. In accordance with floristic studies, plants were sent together with a group of tribe members. Various age groups of carefully chosen tribal members were led on expeditions into the bush to collect essential plants for ethnobotany. Private discussions with previously obtained plants were also included.

Audiovisual aids

It was really beneficial to take part in their feasts, festivals, and other social events to learn about the plants and see how they are utilized. Other methods of capturing the tribes' ethnobotanical existence included interviewing members of the tribes, taking photographs of some of their plant-related activities and notable plants, and documenting some of their folklore.

Results

The majority of plant species are found in the Poaceae, Euphorbiaceae, and Acanthaceae families, then Minosaceae, Liliaceae, Solanaceae, Moraceae, Fabaceae, Gesneriaceae, Discoraceae, Rhamnaceae, and Celesteraceae. The results, which are shown in a table, are largely consistent with other ethnobotanical studies (Punjani BL, 2002; Katewa SS, 2003).

Table 1: Ethnomedicinal uses of plant species in Aravalli district of Gujarat

Medicinal Plant name, Family name/local name	Medicinal uses and formulations from local communities/tribes
<i>Abrus precatorius</i> (L.) Papilionaceae / Chanothi	Cough and Cold: 10 g of dried root powder mixed in water is consumed two times per day for 2 to 3 days Mouth Ulcer: Fresh leaves are manducated and eaten as the juice is known for treating mouth ulcers
<i>Acacia nilotica</i> (L.) Del.	Toothache: The tender stem twig

<p>Mimosaceae / Deshibaval</p>	<p>is used for 2 to 3 days as a toothbrush Piles: One teaspoonful root juice is given orally 3-4 days to once a day to cure piles. Eye diseases: A cut is made in the root to collect the fluid that oozes out from the root. The fluid is used as eye drops to treat redness of eye and to reduce the feeling of burning in the eye.</p>		<p>two-three days to cure tumour in any parts of the body or in the neck</p>
<p><i>Aegle marmeloes</i> (L.) / Rutaceae / Bili</p>	<p>Sunstroke- Fruit is crushed to obtain juice and mixed with a litre of water and is consumed once a day to reduce body heat Diabetes- Extracted leaf juice mixed with a cup of water, is given thrice a day for a couple of weeks to treat hyperglycemia</p>	<p><i>Alangiumsalvifolium</i> (L.f.)</p>	<p>Fever- The decoction of the root is consumed Boils- Leaves in lukewarm condition is applied on the boils</p>
<p><i>Ageratum conyzoides</i> L. Asteraceae / Galjibh</p>	<p>Boils- Such fresh lukewarm leaves are applied topically around the affected area, and then bandaged once a day for</p>	<p><i>Aloe barbadense</i> L. Lilia ceae / Kuvarpathu</p>	<p>Piles- Leaves are crushed and the juice is consumed in the morning for 8-10 days Hair-care- The leaf pulp extract is applied on the scalp every night to treat premature falling of hair. A spoonful of leaf juice is orally taken to treat the same.</p>
<p><i>Annona squamosa</i> L. Annonaceae / Sitaphal</p>			<p>Injuries- About 5-7 drops of fresh extracts of leaf is applied on the wound area twice a day to induce healing by controlling bleeding, and disinfecting the wounded area.</p>
		<p><i>Anogeissussericea</i> B randis / Combretaceae / 'Aendrokh'.</p>	<p>Belly enlargement: Leaf Boiled leaves in lukewarm</p>

	condition (100 g, approx.) are spread over affected area which was previously applied with ghee/ oil and bandaged with cotton cloth once a day up to two days to get relieve from		bark juice is taken orally twice a day for upto three days
<i>Argemonemexicana</i> L. / Papaveraceae / Darudi	Skin diseases: The root paste is applied and tied on the affected skin areas to treat ringworm infection and its decoction is used in treating roundworm infections.	Boswelliaserrata Rox b	Antidote: 25 g fresh boiled leaves in lukewarm condition spread over affected area and then bandaged once a day for three days to reduce swelling and poisonous effect caused due to insect bite.
<i>Azadirachtaindica</i> A . Juss.	Gynecological problems: 200 g of flowers is crushed and added with fresh leaf paste of 10 leaves and is consumed with water in the morning and night for 2-3 days to regulate excessive bleeding during menstruation. Tuberculosis: A spoonful of seed oil is given twice/ day for a month to treat tuberculosis.	<i>Butea monosperma</i>	Antidote: The seed is crushed and made into a paste and spread on the surface of skin twice for a couple of days to ward off the toxicity effect at the site of bite. Dental problem: 1 g of the powdered gum is applied in the achy tooth to ameliorate pain in teeth and gums.
<i>Bombaxceiba</i> L.	Diarrhoea: A spoonful of stem	<i>Capparissepia</i> L. / Capparaceae / 'Kanner'. Part used: Root	Mumps: Paste of 50 g root of 'Kanner' [<i>Capparissepia</i> L. (Capparaceae)] and 20 g seed of 'Kalijiri' [<i>Vernoniaanthelmintica</i> (L.) Willd. (Asteraceae)] is applied topically

	on cheeks for once a day up to two days to reduce swelling due to mumps.
Calotropis procera (Ait) R.Br Asclepiadaceae / Nanoakado	2-4 drops of latex is applied thrice a day in the affected areas for at least two days to remove the stuck thorn from the human body.
Cassia fistula L. Caesalpinaceae / Garmalo	Headache: Fresh Paste of leaves is topically applied over forehead to get rid of headache
Citrullus colocynthis (L.) (Kanwar et al., 2006)	Skin diseases The paste prepared from fresh root is topically applied on the affected part of skin to ward off fungal diseases (itching, ringworm)
Dichrotrachyscinerea (L.) W. & A. / Mimosaceae / 'Medol'. (Punjani, 2006)	Stem bark Paste is applied topically over affected part on the skin for rupturing and fast healing of the boil. Diarrhoea: Leaf extract mixed with a teaspoonful of fine sugar is consumed orally once a day for to cure diarrhoeal

	infections.
Emblica officinalis Gaertn. / Euphorbiaceae / Amla	Physical weakness: A teaspoonful of dried fruit powder mixed with equal quantity of honey, is given twice orally for a week to treat physical weakness.
Euphorbia tirucalli L. Euphorbiaceae / Kharsani	Dental problem: Fresh latex soaked Cotton is kept on painful molars or achy tooth to ameliorate gum pain and toothache
Ficus benghalensis L. Moraceae / Vad	Asthma- A teaspoon of fresh leaf extract is taken along with honey once a day for upto a week to cure asthma.
Grewia flavescens Ju ss Tiliaceae / Trambath	Bone fracture- Every morning, 200-300 ml decoction of fresh branches/stem is given orally until bone gets normal.
Holoptelea integrifolia (Roxb.)	Skin diseases: The fresh paste of leaves is applied twice on the skin every day to cure ringworm.

<i>Holostemmaannularium</i> (Roxb.) K. Schum. / Asclepiadaceae / 'Bhatto'	cough and cold: About 5 cm piece of root is chewed and the juice is swallowed slowly thrice a day for two days to cure		over wounds for inducing healing and preventing pus formation.
<i>Helicteresisora</i> L. / <i>Sterculiaceae</i> / 'Maradsing'	Filtered fruit mixture is given orally twice a day for 2-3 day to cure diarrhea.		<i>Mucunapurita</i> Hk.f. Papilionaceae / Kuvech Spermatorrhoea- A teaspoon of seed powder is taken along with lukewarm milk every morning for two weeks to treat sexual debility.
<i>Kirganeliareticulata</i> (Poir.) Baill / Euphorbiaceae / Kamboi	Diarrhoea- Fresh leaf extract is taken orally once for two to three days Dental problems The tender stem twig is used as a toothbrush.		<i>Pergulariadaemia</i> (Forsk.) Choiv Skin diseases- The fresh latex of the plant is applied topically over affected part on the skin to cure itching and ringworm infections.
<i>Leptadeniapyrotechnica</i> (Forsk.) Decne. / Asclepiadaceae / 'Khip'.	Tuberculosis (TB): 500 g of tender stem is boiled with a liter of water. Two teaspoon of cooled filtrate is taken orally twice a day for upto a month.		<i>Phyllanthusfraternus</i> G.L. Webster Diabetes- 5 gm of leaf is taken and crushed along with a cup of water. The filtrate obtained is given orally once a day for at least two week to cure diabetes.
<i>Madhucaindica</i> J.F. Gmel Sapotaceae / Mahudo	Bone fracture: To cure a bone fracture and reduce swelling at the site of the dislocation, flower petals are draped over the damaged area for a month.		<i>Plumbagozeylanica</i> L. Ringworm: The paste of fresh crushed root is topically applied on the infected area once a day.
<i>Moringaconcanensis</i> Nimmo	About 15 g powdered gum in heated and spread		<i>Pterocarpusmarsupium</i> Roxb.var. Acuminatus. Papilionaceae / 'Biyo'. A teaspoon of powdered bark is consumed with water every day morning for up to

	five days to treat menorrhoea
Prosopischilensis (Molina) Stunze / Mimosaceae / Gandobaval	Boils- The paste of fresh leaves is applied topically daily twice to cured over affected part to cure abscess or boils.
Solanumindicum L. Solanaceae / jangliringani	Dental problem- In order to treat a toothache, the delicate stem twig is chewed and the juice is gently eaten three times each day.
Syzygiumheyneanum Wall. ex W. & A. / Myrtaceae / 'Makanjambu'.	Bark Paste is applied topically over affected part on the skin to cure wounds.
Tephrosiavillosa (L.) Pers	Boils: Boils are treated by applying the leaf paste topically to the infected region, bandaging it once daily for two days, and then removing the bandage.
Tinosporacordifolia (Wild.) Miers. / Menispermaceae / Galo	Diabetes: One teaspoonful of powdered stem along with water given orally once daily morning for two weeks to cure and control diabetes.

Tridaxprocumbens L. / Asteraceae / 'Pardeshibhangro'	Cut and wounds: Juice of the plant is filled in the fresh wound to prevent pus formation and for fast healing
Tribulusterrestris L. Zygophyllaceae / Gokhru	Pain: About 10 g powdered fruit mixed with 100 ml of water. The mixture is given orally once daily morning for five days to cure backache.
Typhaangustata Bor y&Chaub. / Typhaceae / 'Ghabajariu'.	Antisepetic: Fruit fibers filled in/sprayed over fresh cuts/wounds for fast healing and to prevent septic. Due to this practice flowing of blood stops immediately.
Vernoniaanthelemi ca (L.) Willd. / Asteraceae / 'Kalijiri'	One teaspoonful seed powder is administered internally with water once to cure intestinal pain
Vitexnegundo L. / Verbenaceae / Nagod	Joint diseases - 10-20 g decoction of flowers (Inflorescence) bud is given orally once daily in empty stomach in early morning for one week to cure swelling and to get relief from

	pain in the joints caused due to arthritis.
<i>Withaniasomnifera</i> (L.) Dunal / Solanaceae / 'Ashvagandha'.	Backache: For up to two weeks, one cup of filtered root decoction is used orally twice a day.
<i>Zizyphusnummulari a</i> (Bum f.) W. & A. / Rhamnaceae	For digestive disorders, the fresh root extract is administered orally twice a day until vomiting ceases.

It is also required to do relevant chemical, pharmacological, and clinical studies in order to support the ethnomedicinal plants' traditional applications. The tribal inhabitants of Bayad Taluka used a variety of wild plant species to treat a wide range of human ailments, including acne, ascariasis, and urinary problems, according to Sharma N et al. (2011). Back discomfort, a bloated stomach, boils, high blood pressure, cracks, diarrhea, menorrhagia, mumps, pain, ringworm, TB, toothache, and wounds are just a few of the illnesses that people might suffer from. To cure a wide range of ailments, these people used hundreds of different wild medicinal plants, the majority of which were herbs, shrubs, climbers, and twiners from trees. The plant's root is the part that is most often used to cure a variety of illnesses, whereas the leaf and the bark are only sometimes utilized (Punjani BL et al., 2003; Bhardwaj, M et al., 2011).

CONCLUSION

It is also required to do relevant chemical, pharmacological, and clinical studies in

order to support the ethnomedicinal plants' traditional applications. Since it was determined that this knowledge was fading every day, it was urged to conserve such crucial and precious knowledge for the following generations. On the other side, it also deteriorates since there is a large loss in floral variation. Therefore, safeguarding floral diversity will be an essential tool for keeping and passing on such important knowledge to the next generation.

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