

AN INVESTIGATION INTO THE MEDICINAL FLORA OF NORTHERN GUJARAT

Swapna Kannuri

Research Scholar

Department of Botany

NIILM University, Kaithal.

sappusaapkannuri@gmail.com

Nirmal Sharma

Research Guide

Department of Botany

NIILM University, Kaithal.

Abstract

The northwest-located Aravalli district of Gujarat has a rich floral and ethnobotanical history. The tribal and rural people maintain their own traditions, customs, and complex and varied cultures. Methods: Between 2018 and 2019, an ethnobotanical study was done to document the medicinal plants used by the residents of Gujarat's Aravalli district in folk traditional medicine practices. This research included several field trips to the subject area. During the recurring field trips, people provided information on a variety of therapeutic plant species. Data was gathered via interviews with residents of the study region, including Bhagats, Vaidyas, priests, shepherds, and local tribal informants. Results: Further research may be done to determine the active medicinal compounds that can be utilized to treat a number of medical disorders. This study's researches have shed light on the native plant species used by people of the Aravalli Districts.

Keywords: Aravalli Hills, Traditional medicines, Ethno medicinal plants, Folk Medicines, Gujarat.

1. Introduction

Approximately 8% of all species identified in the biodiversity of the planet are found in India. Since 2000 BC, traditional medicine has been practiced. The ancient medicinal systems that may be found in India include Siddha, Ayurveda, and Unani. Plant-based medications and their derivatives are derived from ethnomedicinal plants as decoctions, dry powders, or other types of plant extracts, claim V. Subhose et al. (2005) and Pan S-Y et al. (2015).

The findings of various studies address the sustainable management of natural resources and the use of traditional medicinal plants [Uprety Y, et al., 2012; Larsen HO, Olsen CS, 2007]. A variety of techniques, including guidelines and recommendations, have been developed to conserve the resources by applying various ways for monitoring the condition of conservational practices to maintain natural resources [Hamilton AC, 2004]. When natural food and medicinal supplies become more limited, sustainable utilization of wild resources from their natural ecosystems may be a helpful alternative conservation approach. Colonization, industrialisation, deforestation, and resource exploitation have reduced the natural resources in the mountains and woodlands, putting biodiversity as well as cultural and ethnomedical values under peril.

Northern latitudes and Eastern longitudes of 72° 15' and 73° 39' [GPS, 2019]. The study region includes the forests in the Aravalli district of northern Gujarat. The majority of the dense distribution of the forest type is made up of dry as well as Mixed Deciduous types with a wide array of floral species. The government has designated a highly populated region in the northeast as a forest area, and the

communities' preferred domain/areas are next to that area. People from tribal tribes or those who reside in mountain ranges often depend on the local medicinal plants that are available in their location to treat their medical ailments as they don't have access to English drugs. According to the World Health Organization (WHO), for minor diseases or medical care, more than 80% of people in developing nations depend only on traditional medical practices [WHO, 2007]. Over 25% of allopathic drugs prescribed, according to Hamilton AC (2004), are derived from wild medicinal plant species.

The qualitative method approach is used in this research, which focuses on comprehending the viewpoints and experiences of ethnobotanists. The cultural elements, underlying faunal distinctiveness, and their connection to the tribal/rural community are also examined. It also analyzes their perspective in relation to their phytochemical properties and the scientific understanding of the medical benefits provided by the collective plant species. In the present study, the ethnomedical uses of plants in Gujarat's Aravalli region were described in depth.

Materials and Methods

Before the survey, we had a meeting with local authorities, village elders, and native residents to explain the purpose of the study and discuss informed consent. We also obtained the participants' signed consent prior to the interview process. We conducted a free-listing experiment with the aforementioned groups of people. Then, semi-structured interviews with the conventional healers, also referred to as Vaidyas and Bhagats, were carried out. Most of the family's elders are said to

have taught them how to treat patients medically, either orally or via other non-codified techniques. We were given in-depth information about the medicinal herbs by the senior vaidyas, who are over 60 years old.

There is evidence of the ethnomedical usage of many and widespread local plants in the Northern Gujarat region. The plant specimens collected from the study area were identified using the Flora of Gujarat state [Shah G L, 1978].

Observation

In the following listing of plant species, the scientific names of the observed plant species are listed in the alphabetical order with their family name and local Gujarati names mentioned in parentheses, followed by their medicinal uses.

1. *Abrus precatorius* L. (Family: Fabaceae; Local Name: Ratti)

- The seeds of this plant were used in the treatment of diabetes and kidney ailments.

- As a traditional medicine practice, it is used in the treatment of leucoderma and animal scratches and other forms of wounds caused by cats, mice and dogs. The leaves are crushed with lime and used to treat acne sores, abscesses and boils by external application.

- The decoction made out of roots and leaves are traditionally used in treating various disorders like bronchitis and asthma.

2. *Ailanthus excelsa* Roxb. (Family: Simaroubaceae; Local Name: Araduso)

- The tree bark contains a bitter compound known as 'ailanic acid'. The bark extract is bitter in taste and its tonic is used as a carminative, febrifuge, abortifacient, antispasmodic and

expectorant. Bark is pulverized and added with goat milk and is used as an anti-diarrheal agent.

- Crushed leaves are used in treating mouth ulcers
- Roasted leaves are bandaged on head to cure headache, gastralgia and tied onto the achy body parts to relieve the pain.
- Roasted seeds are used in treating cough and colic pain. Infusion of stem bark is also used to cure cholera.

3. *Alangium salvifolium* (L.f.) (Family: Cornaceae; Local Name: Ankol)

- The leaves of *Cassia auriculata* L. and *Alangium salvifolium* is crushed to make a paste and it is used as an anti-inflammatory agent to treat rheumatic pains.
- The seed paste is used in hair regrowth on bald heads.
- The decoction made out of its root bark is given to induce abortion in pregnant women.
- The paste made out of its root bark is applied on wounds and ulcers as it has healing properties.
- Juice extracted from this fruit is used to get relief from sunstroke.

4. *Bacopa monnieri* L. (Family: Scrophulariaceae; Local Name: Brahmi)

- Juice obtained from leaves is used in treating epilepsy, nervous diseases like insanity.
- It is used to treat aphonia, in enhancing memory power, to reduce fever, cough, fever, and asthma.
- Whole fresh plant is used in the treatment of malaria.
- The juice extracted from plants is mixed with castor oil to treat snakebites. The dried powder of the plant is added to cow's milk and is given orally to treat the same.

5. *Balanites aegyptiaca* L. (Family: Zygophyllaceae; Local Name: Hingua)

- Ripe fruits of this tree species are used for treating skin diseases and whooping cough.
- Seed oil is used for burns, freckles and for soap making
- Pulp of ripe fruit is administered orally in patients with diarrhoea complaints.
- Seed paste is obtained by rubbing it with water and applied externally on pimple.
- Powder of stem bark mixed with curd and given internally to cure cholera
- Stem bark along with Unripe fruits and leaves are crushed and add water then filtered this filtered syrup is given to children to kill intestinal parasites.
- Roasted seeds are given in cough and colic.
- Pulp of ripe fruits is also employed for treating obesity.

6. *Bambusa arudinacea* (Retz.) Wild (Family: Poaceae; Local Name: Toncor)

- The juice of flowers is used as eardrops for earache and deafness.
- The plant extract is used to treat inflammatory conditions.
- Bark is used in treating skin eruptions and other skin ailments.
- The root is burnt and its ashes are applied to treat conditions like bleeding gums, ringworm infections and inflammatory joints.

7. *Barleria cristata* L. (Family name: Acanthaceae; Local Name: Jhinti)

- Whole plant is used as a traditional medicine in treating burns, wounds, gingivitis, inflammation, and diabetes.
- It is traditionally used in treating cough, skin infections, anaemia and tuberculosis.

- Leaves of this plant is used to ameliorate inflammations and also provides toothache relief.
 - The fresh juice of the plant is used in treating phlegm and fever, and the paste obtained from the leaves is used to prevent cracking in the foot sole during the rainy season.
 - Its root is used in treating cough and anaemia. On the other hand, root infusion is used to ameliorate swellings in the tooth and mouth sores.
8. *Calotropis procera* Ait. R.Br. (Family: Asclepiadaceae; Local Name: Aakado)
- The fresh tender roots of this plant is used as a toothbrush.
 - Root bark is ground to make a paste and applied on inflammations or its latex or mature leaves are warmed and tied with a cloth bandage to treat swellings in rheumatism.
 - For treating dry cough, the dried flowers are powdered and mixed with powdered black pepper (*Piper nigrum* L.) and mixed with jiggery and saltjuice to treat dry cough.
 - The juice of the root is applied drop by drop in the ears to cure sore ears and this root juice is also used in treating pain in the molar teeth.
 - The leaves are warmed and tied in the abdomen region to treat colic pains.
 - The root bark is dried and powdered to be taken internally for curing cough and asthma.
9. *Cassia fistula* L. (Family: Caesalpinaceae Leguminosae; Local Name: Garmalo)
- Bark and leaves contain tannin. Gum obtained from this plant is taken with water for treating diarrhea.
 - Ripe fruit-pulp contains sugar,

tannin, gluten and gum. The fruits from this tree are cooked and eaten as a vegetable to cure fever hysteria and fever.

10. *Crateva nurvula* Buch-Ham (Family: Capparaceae; Local Name: Vayvarno)

- Decoction of bark is given in treating conditions like calculus and other urinary affections
- Juice of fresh leaves is given with milk in rheumatism.
- The leaves are cooked and eaten as a vegetable which is known for curing of neuralgic pains, paralysis and chronic rheumatism.
- Fresh Paste of leaves is applied on gouty swelling to relieve pain.
- The stem bark and root boiled in castor oil and oil is used as an embrocation in case of chronic rheumatism.
- The Juice from stem bark is used to treat burnt skin

11. *Datura metel* L. (Family: Solanaceae; Local Name: Dhaturu)

- The fresh leaves are poulticed to treat rheumatic swelling of the joints.
- Roasted leaves bandaged on the head to treat headaches.
- Dry leaves smoked in pipe to cure asthma and bronchitis.
- Stamens of flowers are given to avoid constipation.
- Paste of burning seeds is used to treat toothache.
- Whole plant has narcotic properties.
- Juice of fresh leaves mixed with lime and added jaggery and mixture applied externally on mumps.
- *Derris Indica* (Lam.) Bennet (Family: Fabaceae; Local Name: Karanja) As it relieves toothache promptly, its twigs are used as toothbrush.
- Seed oil is used in treating skin diseases by mixing it with lemon juice

and applied on scalp to cure dandruff.

- Fresh leaves juice is applied on eczema.
- Roasted seeds are eaten to stop vomiting.
- Powdered seeds are given ill fevers, rheumatism, and sluggish liver.
- Decoction of leaves is given to treat various conditions like rheumatism, diarrhoea and cough.
- Decoction of stem bark is given to control bleeding in piles.
- Flowers are taken as an anti-diabetic medicine.

12. *Echinops echinatus* Roxb. (Family: Asteraceae; Local Name: Utkanto)

- The root infusion is given to animal to cure flatulence.
- The root decoction is given in treating conditions like cough, fever and sexual debility.
- The root paste is applied on to bite marks of any poisonous reptile bite.

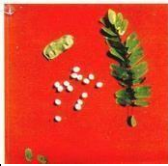





13. *Embllica officinalis* Gaertn. (Family: Euphorbiaceae; Local Name: Amla)







- Fruits have a rich source of vitamin C. Juice of fruit is mixed with sugar and given orally on burning urination trouble.
- Infusion of seed mixed with powdered bark of 'jambu' (*Syzygium cumini*) and given orally in treatment of diabetes.
- Its bark contains tannins and the decoction obtained from the bark and leaves is used as a mouthwash in treating infections in the throat and to relieve toothache.
- Fruits are used as an aphrodisiac, stomachic, mild laxative and carminative agent.






14. *Moringa concanensis* (Family: Moringaceae; Local Name: Saragavo)

- Juice obtained from the leaves of moringa is given to reduce body weight and cholesterol. The fresh leaves juice is given to strengthen fertility in women. Fresh paste of leaves is applied on the surface of the body to get rid of jaundice.
 - The moringa leaves are cooked and eaten to reduce the heat in the eyes.
15. *Syzygium cumini* (L.) Skeels (Family: Myrtaceae; Local Name: Jambolan, Jamun)
- Its bark is powdered and taken with goat milk to treat diarrhea in humans and also used in treating animal diarrhea.
 - Seeds are pulverized and applied on the body for treating skin ailments.
 - Leaves are macerated into a paste to apply on scorpion bite marks as it acts as an antidote.
 - The dried stem bark is burnt to produce ashes and added with honey to treat emesis.
 - The plant twigs are used to treat mouth ulcers.

Table 1
List of figures of medicinal plants used in traditional medicine practice

		
<i>Abrus precatorius</i> L.	<i>Ailanthus excelsa</i> Roxb.	<i>Alangium salvifolium</i> L.
		

<i>Bacopa monneri</i>	<i>Balanites aegyptiaca</i> L	<i>Bambusa arudinacea</i> (Retz.) Wild
		
<i>Barleria cristata</i> L.	<i>Calotropis procera</i> (Ait.) R. Br	<i>Cassia fistula</i> L.
		
<i>Crateva nurvula</i> Buch-Ham	<i>Datura metel</i> L	<i>Derris Indica</i> (Lam.) Bennet

		
<i>Echinops echinatus</i> L.	<i>Emblica officinalis</i> L	<i>Moringa concanensis</i> L.
		
<i>Syzygium cumini</i> L.		<i>Oroxylum indicum</i> (L.)

16. *Oroxylum indicum* (L.) Vent.

- Its root is one of the ten roots

which is used in the preparation of Dashmul kwath. It has anti-inflammatory, and anti-rheumatic properties.

- The bark from the stem is powdered and taken orally along with water to treat hemorrhoids.
- The paste made from root bark is given to increase hunger and improve digestion.
- The roots or barks from the stem is macerated with water for overnight and a decoction is prepared from it and taken orally to cure Jaundice.
- The paste obtained from the stem bark is used as an ointment to treat burns and inflammations.

4. Conclusion

We investigated and evaluated the medicinal plants that are used in traditional medicine to treat both acute and chronic illnesses as part of our research. According to their indigenous knowledge system, locals use a range of plants for their everyday requirements (Bhasker, 2002; Katewa SS et al, 2003; Sharma N et al, 2011). After much trial and error, the forefathers and indigenous people of the Aravalli region used plant-based remedies as treatments for a range of illnesses, and they transmitted their skill and medical knowledge to their younger generations. The preservation of traditional medical knowledge and the identification of plant-based therapeutic molecules with significant pharmacological potential might both benefit from studies on these ethno-medicinal plants. Practitioners of traditional medicine and indigenous people of the Aravalli area might provide information on these plants. The findings of this research are in line with other analyses of the possible ethnobotanical value of plant species in the Aravalli

region.

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