



## DOCUMENTATION OF ETHNO-MEDICINAL PLANTS USED BY GAMIT TRIBALS IN SONGADH TALUKA, TAPI DISTRICT, GUJARAT, INDIA

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### Abstract

The present study deals with ethno-medicinal plants used by the Gamit tribals of Songadh, Taluka, Tapi District, Gujarat. Field work was done through frequent visits to the selected locality during 2013-2014. During the field work, meetings and interviews were held with the 'Bhagats' in different areas of the taluka. The information was gathered through the questionnaire method and through discussions with local, tribal healers. About 61 plant species belonging to 57 genera and 33 families used for ethno-medicine to cure various diseases have been documented. The study documents information on the medicinal plants including their botanical names, Gamit names, parts used, and mode of preparation of medicine. Tribals used many different forest plants, weeds, flowers, seeds and barks in their traditional treatments. They know about number a of rare medicinal plants and their application. With the help of new technologies, their data could be scientifically proved, so that the scientific world will accept the traditional systems.

**Key words:** Ethno-medicinal plants, Gamit tribals, Songadh taluka

### Introduction

Since the beginning of human civilization, humans have been using many herbs and herbal extracts as medicine. The classical Indian texts, the Rig-Veda, Atherveda, Charak samhita and Sushruta samhita provide evidence of the use of plants by our ancestors. It indicates that the herbal medicines have been derived from rich traditions of ancient civilization and scientific heritage. Among the ancient civilizations, India has been known to be a rich repository of medicinal plants (Lachure, 2012). The All India Ethno-botanical Survey estimated that over 7,000 plant species are used by 4,539 ethnic communities for human and veterinary care across the India (Jain, 1997).

Traditional medicine is widely used in the homes of tribals and forest dwellers. Traditional medicine and ethno-botanical information play an important role in scientific research. Among the medicinal plants used in Ayurvedic medicines for their therapeutic action; some of these have been thoroughly investigated (Bharti *et al.*, 2013).

An attempt has been made to explore traditional medicinal knowledge of plant materials which are readily available in Songadh taluka, Tapi district of Gujarat. The ethno-botanical information was gathered through several visits, questionnaires and group discussions with local peoples and "Bhagats" (Vaid).

### Materials and method

#### Study area

Fort Songadh is located at 21.17°N and 73.57°E. It has an average elevation of 112 meters (367 feet). The town is located at the foot of a solitary hill. Songadh is surrounded by hilly and dense forest areas and is bordered by areas of Maharashtra State, Dangs District and forest areas of Mandvi of Surat district and Vyara and Uchhal talukas of Tapi district. It has water reservoirs like the Ukai Dam on the Tape river and the Doswada Dam on the Mindola river. Songadh taluka has a dry moist deciduous type of forest. It has a bigger geographical area than other talukas of the district. The average rainfall of the taluka is 2000 mm and the temperature varies from

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**Table 1:** List of Plants which have Ethno-medicinal value used by Gamit Tribal in Songadh Taluka, Tap District, Gujarat.

List of Plants which have Ethno-medicinal value used by Gamit Tribal in Songadh Taluka, Tap District, Gujarat							
S.No.	Scientific Name	Family/Sub-Family	Gamit Name	Part Used	Disease	Preparation	Dosage
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	<i>Abelmoschus manihot</i> (L.) Medic.	Malvaceae	Mani bendi	Tuberous roots	Jaundic	Roots are crushed and mixed with milk.	Juice is taken twice a day
2	<i>Abutilon indicum</i> (L.) Sweet	Malvaceae	Zurkali	Roots	Diarrhea	Roots are crushed and extracted as a juice.	A cup of juice is taken in a day
3	<i>Aloe vera</i> (L.) Burm.f.	Aloeaceae	Kuvapatha	Fleshy leaves	Skin disease	Fleshy leaves are crushed and made into a paste	The paste is applied on the infected region until cured
4	<i>Annona squamosa</i> L.	Annonaceae	Sitafal	Bark	Delivery problem	Bark of 'Sitaphal' + Bark of 'Calotropis' are crushed and kept in a cup of water and a juice is prepared.	A cup of juice is taken twice a day until cured
5	<i>Asparagus racemosus</i> Willd.	Liliaceae	Jenjalio	Tuberous roots	Breast feeding problems	Roots are taken out from soil and washed well.	Roots are chewed once a day
6	<i>Azadirachta indica</i> A. Juss.	Meliaceae	Limdo	Leaves	Diarrhea and Headache	Leaves are crushed and juice is extracted.	A cup of juice is taken twice a day
				Bark	Abscess	Bark is rubbed in order to make a paste.	The paste is applied on the infected part until cured
7	<i>Bauhinia racemosa</i> Lam.	Caesalpiniaceae	Hingalo	Bark	Urinary problems	Bark is to pound to a powder and mixed in water; sugar is added and juice is prepared.	A cup of juice is taken once a day for two days
8	<i>Blumea lacera</i> (Burm.f.) DC.	Asteraceae	Moya	Whole plant	Shing (Scorpion) and Bleeding (piles)	Whole plant of 'Moya' is crushed and made into a paste.	A paste is applied on the infected part and kept for two days
9	<i>Bryophyllum pinnatum</i> (Lam.) Oken	Crassulaceae	Panphuti	Leaves	Kidney stone	Orally leaves are eaten.	Two to three leaves are eaten and butter milk is taken immediately after.
10	<i>Butea monosperma</i> (Lam.) Taub.	Fabaceae	Khakhro	Flowers	Heat Stroke	Flowers are crushed and mixed with water and a paste is prepared.	The paste is applied on whole body and changed every day until cured.
				Flowers	Fever	Flowers are crushed and mixed with water.	Take a bath with this water twice a day until cured.

**Table 1 Continued.....**

*Table I Continued .....*

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
11	<i>Caesalpinia bonduc</i> (L.) Roxb.	Caesalpiniaceae	Kachka	Seeds	Diarrhea	Seeds are rubbed and the paste is mixed with a cup of water.	Take one spoon twice a day for two days.
12	<i>Calotropis procera</i> (Aiton) Dryand.	Asclepiadaceae	Ruvada	Seeds	Lung infection	Seeds are mixed with jaggery.	This mixture is taken for two to three days.
13	<i>Canavalia gladiata</i> (Jacq.) DC.	Fabaceae	Dabhaya	Whole plant	Menstrual problems	Leaves are heated.	Heated leaves are tied on stomach
14	<i>Careya arborea</i> Roxb.	Leeythidaceae	Khatikuhmbi	Bark and leaves	Blood clotting	Climbers of Dabhaya+ fresh leaves of Bordi ( <i>Ziziphus jujuba</i> ) are crushed and kept in water for sometimes and juice is prepared.	A cup of juice is taken twice a day for Two days
15	<i>Carissa carandas</i> L.	Apocynaceae	Kandi	Roots	Urinary infection	Bark and Leaves are crushed and paste is made from it.	Paste is applied on the injured part
16	<i>Cassia fistula</i> L.	Caesalpiniaceae	Girmalo	Roots	Headache	Roots are crushed and a juice is extracted.	A cup of juice is taken twice a day for 2 days.
17	<i>Cocculus hirsutus</i> (L.) W.Theob.	Meliaceae	Vasana	Roots	Snake bite	Roots are ground into a powder, mixed with water and a paste is prepared.	The paste is applied until cured
18	<i>Cordia dichotoma</i> G.Forst.	Boraginaceae	Helti	Roots and bark	Diarrhea	Roots are crushed and kept in water for sometimes.	Paste is applied on the infected part
19	<i>Cuscuta reflexa</i> Roxb.	Convolvulaceae	Jivarakha	Whole plant	Fracture, Ulcer and Fever	Bark is crushed and kept in water and juice is prepared.	A cup of juice is taken every day twice a day.
20	<i>Dolichandrone falcata</i> (Wall. ex DC.) Seem.	Bigoniaceae	Medhningi	Bark	Diarrhoea	Whole plant is crushed and a juice is extracted	A cup of juice is taken every day twice a day
21	<i>Echinops echinatus</i> Roxb.	Asteraceae	Upkatiya	Bark	Snake bite	Bark of 'Medhningi' and bark of ' <i>B. racemosa</i> ' are both ground to a powder and mixed with water	Take a cup once a day for two days
						Bark are crushed and made paste.	Paste are applied on infected part.
						Bark of 'Upkatiya' + Bark of 'Bhoyumbri' + Bark of ' <i>B. racemosa</i> ' are crushed and kept in a cup of water and a juice is prepared.	A cup of juice is taken twice a day until cured

*Table I Continued .....*

*Table 1 Continued .....*

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
22	<i>Eleusine coracana</i> (L.) Gaertn.	Poaceae	Nagli	Seeds	Diabetes	Seeds are ground to flour	Chappati is made out from flour and eaten
23	<i>Euphorbia nerifolia</i> L.	Euphorbiaceae	Habra	Stem	Stomach ache	Stem is heated	Heated stem is tied on the abdominal region
24	<i>Ficus racemosa</i> L.	Urticaceae	Umro	Leaves	Diarrhoea	Three to five are heated	Leaves are tied on the abdominal region
25	<i>Hemidesmus indicus</i> (L.) R. Br. ex Schult.	Asclepiadaceae	Anantmul	Roots and Leaves	Skin disease	Leaves are taken and juice is extracted	A cup of juice is taken twice in a day
26	<i>Hibiscus hirtus</i> L.	Malvaceae	Mani bendi	Tuberous Roots	Jaundice	Roots are crushed and mixed with milk	A juice is taken twice a day
27	<i>Hibiscus sabdariffa</i> L.	Malvaceae	Khatibhindi	Fruits	Blood pressure, cardiac tissue and cholesterol	Fruits are taken and crushed to make a juice	A cup of juice taken in a day until cured.
28	<i>Holarrhena pubescens</i> Wall. ex GDon	Apocynaceae	Kudi	Leaves	Body pain	Leaves of 'Kuwadi', bark of 'Bili' and 'Aali' are heated and boiled in water.	Take a bath with this water
29	<i>Ipomoea aquatica</i> Forssk.	Convolvulaceae	Nafatia	Leaves	Appendix	Leaves are washed well and crushed and made into a paste	The paste is applied on the abdominal region for two days.
30	<i>Ipomoea carnea</i> Jacq.	Convolvulaceae	Bahavalia	Leaves	Appendix	Leaves are washed well and crushed and made into a paste	The paste is applied on the abdominal region for two days.
31	<i>Justicia adhatoda</i> L.	Acanthaceae	Arduso	Leaves	Cough	Leaves of 'Ardusa' and leaves of 'Tulsi' are crushed and boiled in 500ml water and a juice is prepared	A cup of juice is taken three times in a day for 3-4 days
32	<i>Lantana camara</i> L.	Verbenaceae	Khardamala	Roots	Fracture	Roots are ground into a fine paste and tied limb after setting the bone	The paste is changed every two days for 15 days
33	<i>Mangifera indica</i> L.	Anacardiaceae	Ambo	Flowers	Sting of scorpion	Roots of 'Khardamala' and tuber of 'Vaskand' are ground to a paste	The paste is applied until cured
34	<i>Manilkara hexandra</i> (Roxb.) Dubard	Sapotaceae	Royana	Bark	Fractures	Flowers are rubbed on the hand	-
35	<i>Martynia annua</i> L.	Martyniaceae	Vaghochkia	Tuberous root	Ulcer	Bark is crushed and juice is extracted	A cup of juice is taken for a week.
						Tuber is rubbed and paste is applied	The paste is applied on the abdominal region

*Table 1 Continued .....*

*Table I Continued .....*

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
36	<i>Mirabilis jalapa</i> L.	Nyctaginaceae	Gulbas	Stem	Abscess	Stem is rubbed and made into paste	A paste is applied on the infected part until cured.
37	<i>Momordica dioica</i> Roxb.	Cucurbitaceae	Kantla	Tuberous root	Rabies and Diabetes	A tuber of the male plant is taken and washed well. Tuber of 'Kantla' and the entire plant of 'Gamliya' are crushed and mixed with wheat flour. This is made into a chapatti and given to the patient.	This food is given every day for one and a half month
38	<i>Moringa concanensis</i> Nimmo.	Moringaceae	Mano Hegvo	Fresh leaves	Headache	Fresh leaves are ground into a fine paste.	Paste is applied on the forehead and tied with a cloth.
					Toothache	Leaves are crushed and the juice is squeezed into the ear	2-3 drops in the morning for two days.
				Gum	Scorpion bite	Gum is rubbed and a paste is prepared	Paste is applied until cured
39	<i>Morus alba</i> L.	Urticaceae	Setur	Fruit	Urinary infection	Fruit is eaten	
40	<i>Ocimum sanctum</i> L.	Lamiaceae	Tulsi	Leaves	Asthma and Diabetes	Leaves of 'Tulsi' + 'Kali mari' are crushed and juice is extracted from it.	A cup of juice is taken twice for two days.
41	<i>Operculina turpethum</i> (L.) Silva Manso	Cowpoulaceae	Huvana	Leaves	Chronic skin disease	Leaves of 'Tulsi' and 'Chanoti' are washed well	Leaves are chewed every day for 10 to 12 days.
42	<i>Oroxylum indicum</i> (L.) Kurz	Bignonaceae	Tetu	Bark	Vomiting and diarrhea	A cup full of leaves are crushed and ground into a fine paste.	The paste is applied in the morning and evening until cured.
43	<i>Pithecellobium dulce</i> (Roxb.) Benth.	Mimosaceae	Hargia-ambli	Bark	Menstrual problem	Bark of 'Tetu' + Seed of 'Ambo' are crushed and a juice is made	A cup of juice is taken twice a day until cured.
44	<i>Pongamia pinnata</i> (L.) Pierre	Fabaceae	Karanj	Leaves	Diarrhea, Cough and Cold	Bark is crushed well and juice is extracted.	A cup of juice is taken for two days.
45	<i>Psidium guajava</i> L.	Myrtaceae	Jamrukha	Fresh leaves	Cough	Leaves are heated.	Heated leaves are tied on the fracture.
46	<i>Pterocarpus marsupium</i> Roxb.	Fabaceae	Biyo	Bark	Menstrual problem	Fresh leaves are washed well	Leaves are chewed until cured.
						A piece of bark is taken, crushed and the juice is extracted.	A cup of juice is taken until cured.

*Table I Continued .....*

*Table 1 Continued .....*

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
47	<i>Punica granatum</i> L.	Lythraceae	Dadam	Roots	Diarrhea	Roots are crushed and juice is extracted.	A cup of juice is taken twice a day.
48	<i>Purexaria tuberosa</i> (Roxb.)DC.	Fabaceae	Bholkhuvli	Roots	Abdominal pain	Roots are crushed and a juice is extracted.	Take a cup once a day for two days.
49	<i>Ricinus communis</i> L.	Euphorbiaceae	Diwale	Leaves	Stomach ache	Leaves are heated	Heated leaves are bound on the abdominal region
50	<i>Cassia occidentalis</i> Linn.	Caesalpiniaceae	Mothodindaryo	Roots	Vomiting and Diarrhea	Roots are taken and washed well and then crushed and put into a cup of water. The Juice is extracted.	Take a cup twice a day for two days
51	<i>Cassia tora</i> Linn.	Caesalpiniaceae	Dinderiyo	Leaves	Sting Scorpion	Leaves are crushed and made into a paste.	A paste is applied on the sting for two days.
52	<i>Syzygium cumini</i> (L.) Skeels.	Myrtaceae	Haro	Seeds	Diabetes	Seeds are ground into a powder	One spoon of powder is taken with one glass water twice a day until cured.
53	<i>Tecomella undulata</i> (Sm.) Seem.	Bignoniaceae	Ragatroana	Bark	Bleeding during delivery	Bark is crushed and kept in water for sometimes and a juice is prepared.	A cup of juice is taken twice a day for two days.
54	<i>Tectona grandis</i> L.f.	Vertebraceae	Sag	Fresh leaves	Wound	Fresh leaves are crushed and a paste is prepared.	A cup of juice is applied on the wound and it is kept bound to it for 3 days.
55	<i>Terminalia arjuna</i> (Roxb. ex DC.) Wight & Arn.	Combretaceae	Arjunsaddo	Bark	Heart diseases	A piece of bark is taken, crushed and the juice is extracted.	A cup of juice is applied on the hand.
56	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Combretaceae	Baheda	Bark	Paralysis	Bark of 'Baheda' + Bark of 'Gamliaavelo' are crushed in water and a juice is prepared.	The whole plant is also crushed and mixed with jaggery and water. The mixture is boiled and then used.
57	<i>Tinospora glabra</i> (Burm.f.) Merr.	Menispermaceae	Gamliaavelo	Whole plant	Skin infection	A cup of juice is taken until cured.	Bark of Tinospora + Bark of Azadiracta are crushed and made into a paste.
58	<i>Tridax procumbens</i> (L.) L.	Asteraceae	Dingalia-khod	Whole plant	Digestion	Whole plant of Tridax and whole	The paste is applied on the infected part.

*Table 1 Continued .....*

*Table I Continued .....*

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
					plant of 'Maka' are ground to a fine paste.	abdominal region for 2 days.	
		Leaves	Fresh wounds	Leaves ground to a fine paste.	The paste is applied on the abdominal region for 2-3 days.		
		Whole plant	Scorpion bite	Whole plant of Tridax + Leaves of Dinderijo are crushed and mixed with salt water and made into a paste.	The paste is applied on the sting for two days		
59	<i>Vachellia catechuoides</i> Roxb.	Mimosaceae	Kati	Asthma Wood, bark	Gaar is pounded into a powder and then boiled with water.	Take a cup once a day until cured	
60	<i>Venilago denticulata</i> Willd.	Rhamnaceae	Aasi	Bark	Bark is dried and finely powdered	The powder is sprinkled on the wound in the morning and evening till cured	
61	<i>Ziziphus jujuba</i> Mill.	Rhamnaceae	Boin	Bark	Abscess Bark is rubbed on a stone and a paste is prepared.	The paste is applied on the abscess until cured	
				Cough	Bark is peeled		
					Bark		

11°C to 40°C. The main tribal communities of the taluka are the Gamit, Chaudhary, Vasava, Kokni, Valvi and Kotvaliyas. Their main livelihoods are agriculture and animal husbandry.

#### Field work

The present study was carried out to collect data of the traditional knowledge, the medicinal plants and ethno-medicinal practices used by the Gamit tribals of Songadh Taluka. Field work was done through frequent visits to the selected locality during 2013-2014 like Nishana, Zarali, Umarda, Vadirupgadh, Hindla, Kakadkuva, Kashimda, Shirishpada and Amalgundi to document the information.

The information was gathered through the questionnaire method and through discussions with tribal, local healers. The herbarium sheets were prepared and identification was done through the standard literature (Shah, 1978). Ethno-medicinal data were collected by the suggested methodology. The data including local name, mode of preparation, medicinal uses and parts used were collected using interview and questionnaires with the practitioners.

#### Results and discussion

The investigation of medicinal plants used by Gamit tribals revealed 61 species belonging to 57 genera and 33 families as is evidenced from the data given in table 1. Maximum number of plants from family Leguminaceae 12 species (Ceaselpinaceae 5 species, Fabaceae 5 species and Mimosaceae 2 species), Convolvulaceae 4 species, Malvaceae 4 species and Asteraceae 3 species are used. Important plants which are used by the tribal people are *Abelmoschus manihot* (L.) Medik., *Cordia dichotoma* G. Forst., *Hibiscus hirtus* L., *Ipomoea carnea* Jacq., *Momordica dioica* Roxb., *Pueraria tuberosa* (Roxb.) DC., *Vachellia catechuoides* Roxb. and others. These plants are used by local inhabitants for various aliments including cough, joint pain, cholera, urinary problem, kidney stone, diabetes, fever, jaundice, diseases of skin and stomach. These useful plants need protection and cultivation in the present context, so that the tribal people may be benefitted

The plant diversity of Tapi district is a boon to the tribal people. It needs to be emphasized that the flora should be conserved for future generations and the tribal population should be encouraged to grow these medicinal plants on a large scale for optimizing their economic potential. There is also an urgent need to document the indigenous knowledge about medicinal

plants which are existing in Songadh taluka, Tapi district, Gujarat.

## Conclusion

The Gamit tribe has a well-developed system of traditional medicine for the treatment of various diseases and disorders among the tribe. But this knowledge is being lost. Tribals used many different forest plants, weeds, flower, seeds and barks in their traditional treatments. Beside these documented plants, these tribal community used several other plants for non-medicinal purpose. The collected information not only shows that many preparations are made from single plants but in some case mixtures of several plants are used. With the help of new technologies, their data could be scientifically proved, so that the scientific world will accept the traditional systems. Nature is providing what we need and our task is to save nature for posterity.

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