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Folk Herbal Medicines Used By the Tribals in Satlasana Forest Area, Mehsana District, Gujarat, India.

Suresh Patel^{1*}, Prashantkumar Desai¹ and Vinodkumar Pandey².

¹Department of Biology, Government Science College, Gandhinagar, Gujarat, India.

²Government Higher Sec. School (Science Stream), Naswadi, Gujarat, India

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*For Correspondence

Department of Biology,
Government Science College,
Gandhinagar, Gujarat, India.

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ABSTRACT

The Aravalli ranges run along the North Gujarat is the ancient region of India, inhabited by tribals living in close vicinity of enriched forest. The present paper contains various folk uses of 36 plant species used by the tribals for their day-to-day requirement. The paper includes the first hand information collected through tribal informants, medicinemen and tribal people of several villages during the field trips in the region for last three years in different seasons. These medicinal plants are used by the local community in curing different disease and health related problems. In conclusion, the medicinal species require special attention to conserve and documentation of their medicinal uses for local people and future commercial production.

INTRODUCTION

Ethnobotany is a multi-disciplinary natural science, which deals with human plant relationship. Importance of Ethnobotany has been realized by the mankind by means of various uses of plants in their day-to-day life since the beginning of life on the earth. During the last half-century, Ethnobotany has more and more been recognized, as a valid discipline that can play a very material role in the advancement of many aspects of scientific, sociological and historical studies. Satlasana was the head quarters of a Thana during the Agency period. It is situated within 24° 00' North latitude and 72° 46' East longitude and North side of Visnagar Taluka and South side of Banaskantha district, as well as the East side of Mehsana district and Kheralataluka and West side of Sabarkantha district. The tribal people residing in and around forest areas are still heavily dependent on locally available medicinal flora for curing their ailments. In the most of the tribal villages, there are usually two/three local medicine men of the traditional medicine, locally known as 'Bhagat'. These practitioners have acquired the knowledge (mostly oral / non codified) for treating patients, mostly from the elders of the family. Indigenous medicinal uses in India were recorded^[1], the uses of Ethnomedicinal plants^[2] and North Gujarat^{[3][4]}.

MATERIALS AND METHODS

Frequent field trips were arranged during last two years in order to collect information about the traditional knowledge of medicinal plants used by the local people to cure their various diseases. During field trips, the questionnaire, camera and audio video instruments were used to interview and discussion with local informants, bhagats and elder villagers of different localities of the area including men and women both, who were familiar with traditional uses of plants. Indigenous traditional practitioners and some knowledgeable tribal informants were interviewed in the forest and in their homes. The data were recorded on the plants part used, local name(s), process of preparation and mode of administration and dosage. The collected plant specimens were identified using flora^[5] and voucher specimens were deposited at the herbarium at Govt. Science College, Gandhinagar, Gujarat. The data considered worth mentioning only when at least 2 to 3 local healers gave similar answers for the same plant.

RESULTS

Enumeration of plant species: In enumeration the plant species are arranged by the alphabetically.

***Abrus precatorius* L. / Papilionaceae / Chanothi^{[6][7]}**

Perennial, deciduous, twiner, woody at base.

Cough and Cold

About 10 g dried root powder taken orally with cup of water twice a day for 2-3 days to cure cough and cold.

Mouth Ulcer

Fresh leaves are chewed and the juice is swallowed thrice a day till to cure ulcers in mouth.

***Acacia nilotica* (L.) Del. / Mimosaceae / Deshibaval**

3-8 m tall, straight or crooked, armed trees, with dark-blackish-brown, irregularly, longitudinally fissured bark.

Toothache

The tender stem twig is used as a toothbrush at least for 2-3 days to cure toothache.

Piles

One teaspoonful root juice is given orally 3-4 days to once a day to cure piles.

Eye problem

A cut is made in the root to collect fluid oozes out from the root. The fluid is used as eye drop to treat redness of eye and burning sensation in eye.

***Aeglemarmeloos*(L.) Corr. / Rutaceae / Bili^[8]**

A thorny deciduous tree, 5-10 m tall, bark grayish-white or grayish-brown, smooth.

Sunstroke

Pulp of fruits is mashed with 1ltr water and made a juice; the juice is given once a day for as a cooling effect in a summer.

Diabetes

Leaf juice from leaves mixed with a cup of water, the mixture is given orally thrice a day for two weeks to cure and control diabetes.

***Ageratum conyzoides*L. / Asteraceae / Galjibhi^[9]**

10-40 cm tall, glandular, pubescent herb.

Boils

Such fresh lukewarm leaves are applied topically around affected area, and then bandaged once a day for two-three days to cure tumour in any parts of body or in the neck.

***Alangiumsalvifolium* (L.f.) Wang. / Alangiaceae / Anko^[10]**

3-10 m tall, thorny tree, with ash-coloured, rough and faintly fissured bark.

Fever

The decoction of root is given orally twice a day to get relief from fever.

Boils

Leaves in lukewarm condition spread over affected area and then bandaged once on alternate day to cure tumor/swelling on body.

***Aloe barbadense* L. / Liliaceae / Kuvarpathu^{[11][12]}**

A succulent herb with leaves with hard prickles on margins.

Piles

Leaf juice is taken orally every morning for 8-10 days to cure piles.

Hair-care

The leaf pulp juice applied gently over scalp once at night till cured to control premature falling of hair. One teaspoonful leaf pulp juice taken orally once at early morning till cured control premature falling of hair.

***Annona squamosa* L. / Annonaceae / Sitaphal**

3-5 m tall, deciduous tree with light-black, rough, longitudinally fissured bark.

Injuries

Five to seven drops of fresh leaf juice filled in wound twice a day for three days to stop bleeding, to heal wound fast and to kill germs immediately.

***Argemonemexicana* L. / Papaveraceae / Darudi**

30-100 cm tall, annual prickly herb.

Skin diseases

The paste of root applied and bandaged on affected parts of skin to cure ringworm and decoction is used in roundworm.

***Azadirachta indica* A. Juss. / Meliaceae / Limado^{[13][14][15]}**

10-15 m tall, evergreen tree, with light-black, slightly longitudinally furrowed bark.

Gynecological problems

200 g crushed flowers (Inflorescence) mixed with 10-15 fresh leaves is given orally with water twice a day for two-three days to control excessive menstruation.

Tuberculosis

One teaspoonful of seed oil is given orally twice a day for one month to cure tuberculosis.

***Barleriacuspidata* Heyne / Acanthaceae / Kantasheliyo**

60-75 cm tall, bushy shrub.

Skin diseases

The paste of leaf is applied topically over affected part of the skin daily twice to cure fungal infection and septic formation on finger of leg skin till cured.

***Bombaxceiba* L. / Bombacaceae / Shimalo**

10-30 m tall, deciduous tree, with grey, glabrous bark; prickly conical bark.

Part used: Bark

Diarrhoea

One teaspoonful juice of stem bark is administered internally twice a day for three days to cure diarrhoea.

***Boswelliaserrata* Roxb. / Burseraceae / Salren**

10-15 m tall deciduous tree.

Antidote

About 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.

***Buteamonosperma* (Lam.) Taub. / Papilionaceae / Khakhro^{[16][17]}**

5-20 m tall deciduous tree, bark rough, ash-colored or pale to dark brown, deeply longitudinally fissured.

Antidote

The paste of the seed is spread over affected area twice a day for two days to remove poisonous effect of insect bite.

Dental problem

About 1 g of powdered gum put in painful teeth to reduce pain in gums and teeth.

***Calotropisprocera* (Ait) R.Br. / Asclepiadaceae / Nanaoakado^{[18][19]}**

3-4 m tall shrub, latex milky, abundant, black ash colored, shallowly longitudinally, fissured.

Injuries

Two-four drops of latex dropped thrice a day in affected areas for at least two days to remove thorn.

***Cassia fistula* L. / Caesalpiniaceae / Garmalo^[20]**

6-10 m tall, deciduous tree, with bark-brown and rough in older parts, grey and smooth in younger parts.

Pain

Paste of fresh leaves is applied topically over forehead twice a day till cured for getting relief from headache.

***Citrulluscolocynthis* (L.)Schrad / Cucurbitaceae / Tundu^[10]**

Prostrate, scabrid-hairy, climbers.

Skin diseases

The paste prepared from fresh root piece and the paste is applied topically over affected part on the skin to cure fungal diseases such as itching, ringworm, etc.

***Dichrostachyscinerea* (L.)W. &A. / Mimosaceae / Mordhundhiyu^[21]**

2-7 m tall, armed tree.

Diarrhoea

The leaf juice mixed with one teaspoonful of powdered sugar and the mixture is given orally once a day for two days to cure acute diarrhoea.

***Emblicaofficinalis*Gaertn. / Euphorbiaceae / Aamala**

8-15 m tall, deciduous tree with yellowish-to-greyish brown, smooth bark, exfoliating in to scales.

Part used: Fruit

Physical weakness

One teaspoonful of powdered fruit mixed with one teaspoonful of honey, then the mixture is taken orally twice for one week to cure physical weakness.

***Euphorbia tirucalli* L. / Euphorbiaceae / Kharsani**

Succulents, dichotomously branched shrubs with milky latex.

Dental problem

Cotton plug is soaked in fresh latex and the cotton plug is put on painful teeth and molars to reduce pain in gums and teeth.

***Ficusbenghalensis* L. / Moraceae / Vad^[22]**

Evergreen tree, 12-14 m tall, with straight trunk and grey or grey to grayish brown, rough bark.

Asthma

One teaspoonful fresh leaf juice is administered internally with one teaspoonful honey once a day for at least week to cure asthma.

***Grewiaflavescens*Juss. / Tiliaceae / Trambath**

2-4 m tall shrubs, with sarmentose, hairy branches, bark brown, smooth.

Bone fracture

About 200-300 ml decoction of fresh branches/stem is administered orally once daily in the morning till cured to cure bone fracture.

***Holopteleaintegrifolia* (Roxb.) Planch / Ulmaceae / Kanji^[16]**

5-16 m tall, deciduous trees with grayish-white or ash colored smooth bark, exfoliating in to small scale.

Skin diseases

The paste of fresh leaves is applied topically daily twice till cured over affected part on the skin to cure ringworm.

***Kirganellareticulata* (Poir.)Baill / Euphorbiaceae / Kamboi**

Straggling, monoecious shrubs with sarmentose branches and smooth brownish or brownish-purple bark.

Diarrhoea

The fresh leaf juice is given orally once a day for two to three days to cure diarrhoea.

Dental problems

The tender stem twig is used as tooth brush at least for two or three days to relieve toothache and strengthening of gums.

***Madhucaindica* J.F. Gmel. / Sapotaceae / Mahudo^[23]**

10-15 m tall, bark black, grayish-black or ash-colored, longitudinally fissured.

Bone fracture

The petals in lukewarm condition spread over affected part and then bandaged for one month to cure bone fracture and to reduce inflammation due to dislocation of bone.

***Moringaconcanensis* Nimmo / Moringaceae / Janglisaragavo**

8-10 m tall tree, with rough, grayish-brown trunk.

Boils

Approx. 15 g powdered gum in lukewarm condition spread over wounds and tied bandaged twice a day for two days to heal wounds fast and to prevent pus formation.

***Mucunapurita* Hk.f. / Papilionaceae / Kuvech^[20]**

Extensive, lignose, hairy twiners.

Spermatorrhoea

One teaspoonful powdered seed taken with lukewarm milk orally once daily in early morning for two weeks to cure sexual weakness.

***Pergulariadaemia* (Forsk.) Choiv / Asclepiadaceae / Chamardudheli^[24]**

Perennial, herbaceous twiner, with milky juice.

Skin diseases

The fresh latex of the plant is spread over affected area thrice a day till cured to ring worm.

The fresh latex of the plant is applied topically over affected part on the skin to cure itching.

***Phyllanthusfraternus* Webster / Euphorbiaceae / Bhoyamali**

20-50 cm tall, annual herb.

Diabetes

5 gm of leaf is crushed then mixed with cup of water and then filtered. The filtrate is given orally once in a day for at least two week to cure diabetes.

***Plumbagozeylanica* L. / Plumbaginaceae / Chittrak**

60-100 cm tall, slender, olivaceous-green, undershrub.

Skin diseases

The paste prepared from fresh crushed root is applied topically over affected area once a day for three days to cure ringworm.

***Prosopischilensis* (Molina) Stunze / Mimosaceae / Gandobaval**

Armed shrubs or small trees.

Boils

The paste of fresh leaves is applied topically daily twice to cured over affected part on the skin to cure abscess or boils.

***Solanumindicum* L. / Solanaceae / jangliringani**

60-120 cm tall, under shrub, with pale-brown or deep-purple bark.

Dental problem

The tender stem twig chewed and the juice is swallowed slowly thrice a day till cured to cure toothache.

***Tephrosiavillosa* (L.) Pers / Papilionaceae / Shegataro**

30-90 cm tall, hairy, undershrub.

Boils

The leaf paste is applied topically around affected area, and then bandaged once a day for two days to cure boils.

Tinosporacordifolia (Willd.)Miers. / Menispermaceae / Galo^{[25][26]}

Extensive, deciduous twiner, bark grayish-white, lenticellate, grooved.

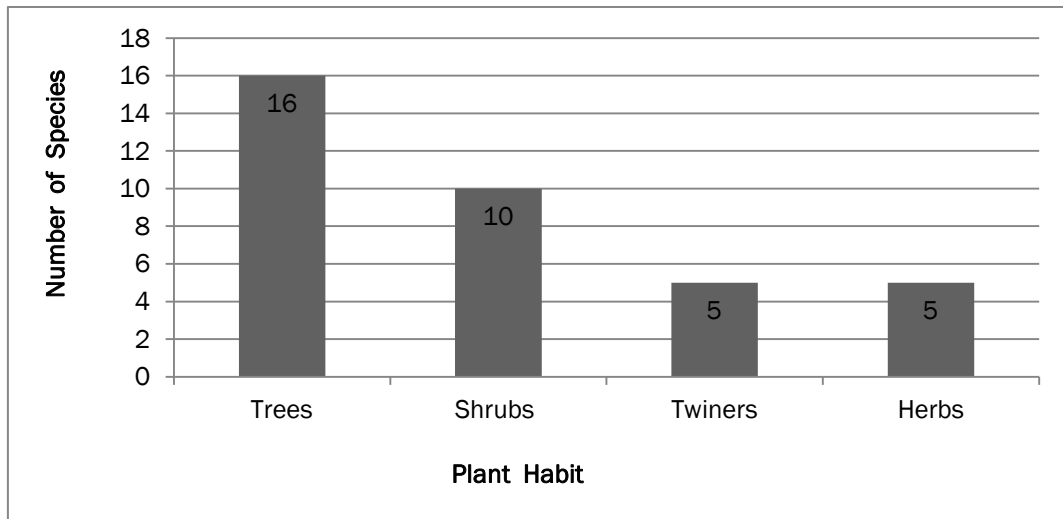


Fig 1: Number of plant species belonging to different habits.

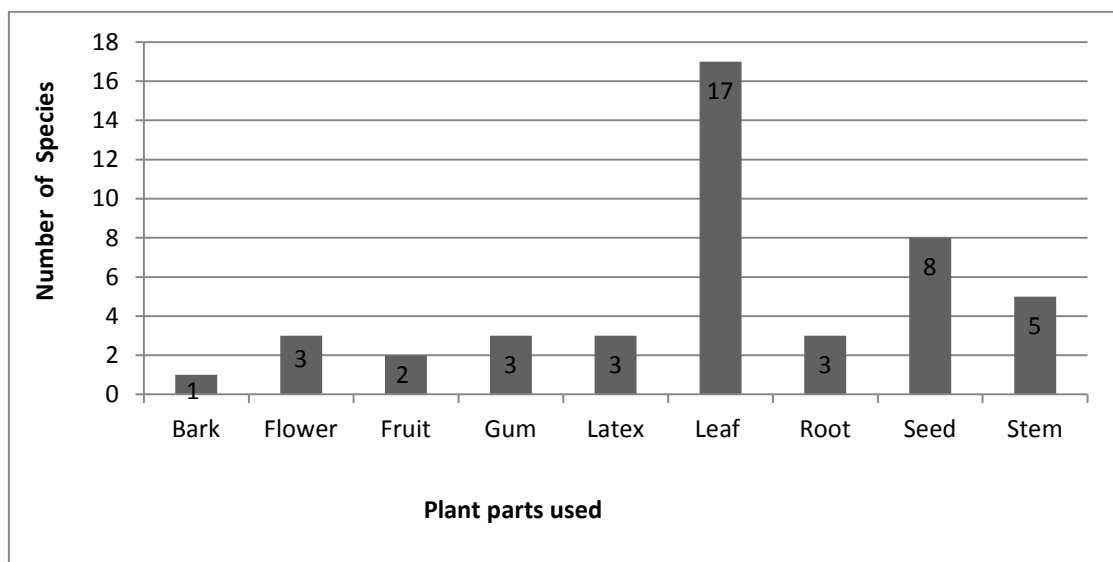


Fig 2: Number of plant species based on parts used

Table 1: Number of plant species used in different diseases

Diseases	No. of Plant Species	Diseases	No. of Plant Species
Antidote	6	Hair-care	1
Asthma	5	Injuries	1
Backache	4	Joint diseases	1
Boils	3	Mouth ulcer	1
Bone fracture	3	Pain	1
Cough and Cold	2	Physical weakness	1
Dental problem	2	Piles	1
Diabetes	2	Skin diseases	1
Diarrhea	2	Spermatorrhoea	1
Digestive disorders	1	Sun stroke	1
Eye problem	1	Tuberculosis (TB)	1
Fever	1	Toothache	1
Gynecological problems	1		

Diabetes

One teaspoonful of powdered stem along with water given orally once daily morning for two weeks to cure and control diabetes.

***Tribulusterrestris* L. / Zygophyllaceae / Gokhru^[27]**

Prostrate or procumbent, hairy, herbs.

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.

***Vitexnegundo* L. / Verbenaceae / Nagod^{[28][29][30][31]}**

Large shrub or small tree, with light-blackish-brown, longitudinally fissured bark, leaves opposite, 3-5 foliate, leaflets period.

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.

***Zizyphusnummularia* (Burm f.) W. & A. / Rhamnaceae / Bor**

Thorny, divaricately branched shrub, 90-120 cm tall, with grey or pale-brown, smooth bark.

Digestive disorders

The extract of fresh root given orally twice a day till cured to stop vomiting.

DISCUSSION

The tribal people of Satlasana forest area use wild plant species for the treatment of different human ailments like Asthma, Antidote, Backache, Boils, Bone fracture, Cough and Cold, Dental problems, Diarrhea, Digestive disorders, Eye complaints, Fever, Gynecological problems, Hair-care, Joint diseases, Injuries, Mouth ulcer, Pain, Physical weakness, Piles, Skin diseases, Spermatorrhoea, Sun stroke, Tuberculosis, Toothache etc. Present investigation showed that in all, the people use 36 different wild medicinal plants for curing various ailments, of which trees were dominant with 16 species followed by Shrubs & Under shrubs, Climbers & Twiners and Herbs (Fig.1).

Out of all 27 families, it is observed that 4 families having 2 or more than 2 plant species whereas, rest of families contribute with only one species each used in the treatment of ailments. For the treatment of various human ailments, 10 plant parts are used. Of which Leaf is used in maximum 17 applications for phytotherapy. Next to it, Seed and Stem each used in 8 and 5 applications, hence it holds second and third position in plant parts used. The details of various plant parts used are given in Fig. 2. The major disease group-wise distribution of plant species for curing ailments is given in Table.1.



Abrus precatorius L.



Acacia nilotica (L.) Del



Aegle marmelos (L.) Corr



Ageratum conyzoides L.



Alangium salvifolium (L. f.)
Wang



Aloe barbadensis Mill.



Annona squamosa L.



Argemone mexicana L.



Azadirachta indica A. Juss.



Barleria cuspidata
Heyne ex Nees



Boswellia serrata
Roxb. ex Colebr.



Butea monosperma
(Lam.) Taub



Calotropis procera (Ait.)
R. Br.



Cassia fistula L.



Citrullus colocynthis
(L.) Schrad



Dichrostachys cinerea (L.)
W. & A.



Emblica officinalis Gaertn.



Euphorbia tirucalli L.



Ficus benghalensis L.



Grewia flevescence L.



Holoptelea integrifolia
(Roxb.) Planch



Kirganelia reticulata
(Poir.) Baill



Madhuca indica J. F. Gmel.



Moringa concanensis
Nimmo



Mucuna prurita Hk. f.



Pergularia daemia
(Forsk.) Chiov



Phyllanthus fraternus
Webster



Bombax ceiba L.



Plumbago zeylanica L.



Prosopis juliflora (Sw.) DC



Solanum indicum L.



Tephrosia villosa (L.) Pers



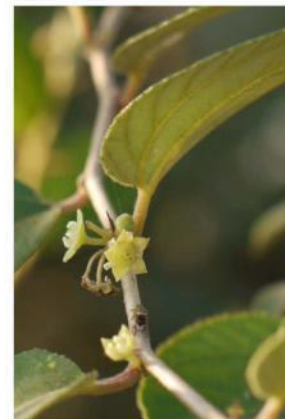
Tinospora cordifolia (Willd)
Miers ex. Hk. f. & Th



Tribulus terrestris L.



Vitex negundo L.



Zizyphus nummularia
(Burm. f.) W. & A.

CONCLUSION

The tribals of Satlasana forest area have a vast wealth of plants, which are sources of medicinal compounds. Therefore, efforts that are more concerted are needed for the documentation of all the tribal medicines and their health practices useful in the treatment of different disorders. Tribals are still

depending on indigenous knowledge system to use different plants for various uses in their day-to day requirement. The traditional knowledge they have through prolonged experiences or passing down the knowledge from generation to the next generation.

Tribal medicinemen have their own rules and beliefs for extraction of medicinal plant or its parts from nature. In this modern era of science, it has become necessary to accumulate, to document and to preserve this rich traditional knowledge, which may provide novel drug for curing particular disease. The present recorded information on traditional knowledge of plants from Satlasana forest area where novel information has been generated will not only provide recognition to this knowledge but will also help in its conservation vis-à-vis providing pharmacological leads for the betterment of human society.

It was suggested to document such vital and valuable knowledge for the future generation as this knowledge found to be decline day-to-day. On the other hand, loss of important floral diversity also leads to declining of it. Hence, conservation of floral diversity will be important tool to sustain and carry such important knowledge to the future generation.

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