



Ethno-botanical dimension of Sacred Groves in Valsad District, Gujarat, India

Hetal M Patel, Meghna Adhvaryu*

Department of Botany, Government Science College, Vankal, Mangrol, Surat, India

Article published on July 15, 2022

Key words: Sacred groves, Ethnomedicinal plants, Valsad District, *In situ* conservation

Abstract

Biodiversity conservation is a need of a day, when deforestation has reached its peak of destruction. Sacred groves (SGs) are such areas of forest which serve as tool for *in-situ* conservation by means of religious and cultural belief system of locals. Several plant species are conserved in SGs which are ecologically, economically and medicinally valuable. Study was carried out to investigate ethno-botanical significance of SGs in Valsad district. Primary data collection was done by taking interviews, using questionnaires from 'Bhagat' (traditional healer), and local tribes living around these groves. There are 480 SGs documented in Valsad district, which harbors valuable plant diversity. Among them, 48 SGs were large in size, more than 100 years old, were selected for ethno-botanical documentation. 182 species have been enumerated as valuable ethno-botanical sp. from these SGs. Plant details such as local name, scientific name, parts used for ethno medicine in various ailments like jaundice, piles, dysentery, diarrhea, fever, piles, conjunctivitis, ulcer, and kidney stone etc. were recorded. In District areas, due to high level of development, anthropogenic activities, modernization and erosion in traditional and civic values (corruption), the conservation of ethnomedicinally important species is affected largely. Existence of SGs & conservation of them has led the SGs be richer in diversity, many conserved species is available abundantly in natural conditions from SGs. Traditional knowledge from such conserved areas is needed to be preserved and should be documented in form of books or People Biodiversity Register (PBR) before SGs and/or traditional practices are destroyed.

*Corresponding Author: Meghna Adhvaryu ✉ meghna.adhvaryu@gmail.com

Introduction

India has diverse diversity and cultural traditions to conserve nature and its biodiversity. Conservation through cultural and religious belief by indigenous people is called sacred grove where all plants and animals are consider as sacred (Sharma P, *et al.*, 2014). Groves are the remnant of virgin forests; it is a belief that they are abode of deities/GODs. It proves as repositories of some endemic, rare and threatened flora (Bhakat RK and Sen UK 2008). As result, grove harbor and protect a diversified gen pool of valuable Ethno-botanical species.

Majority of the world population depends on natural resources for their sustenance. Plants are the most valuable natural resource used in varied system of medicinal practices. Approximately 70000 plant species are utilized as indigenous medicine in the world; 20,000 plants has been used in traditional medical practices, among them only 7,000 to 7,500 species of plants are used by traditional healer to cure different ailments (Pradhan, *et al.*, 2016; Anbarashan, *et al.*, 2011).

In India, major traditional medical practice like Ayurveda, Siddha and Unani, has 700 species and 600 plant species as folk medicine (Mohammed R, *et al.*, 2009). Heavy use of these spp in different systems of medicine, increased population, deforestation, urbanization, human interface and developmental activities leads valuable plant spp to threatened and extinct level (Khumbongmayum *et al.*, 2005). Traditional knowledge of indigenous people should be properly documented as books and PBRs and plant spp requires conservation and protection before they are obliterated. In present study, Valsad District of Gujarat, India was selected, for the documentation of the Ethnobotanical uses of plants growing in sacred groves (SGs).

Material and method

Study Area

Valsad district is situated to the southern part of the Gujarat state in India. It lies between 72.73' to 73' east longitude and 20.07' to 21.05' north latitude. The district is surrounded by Navsari district to the north,

Dang district to the east and Maharastra state to the south. The Arabian Sea lies west of the district. There are six talukas in Valsad district (Table 1). Vapi is one of them known for the industrial development. The majority of the area falls under rural setup having 62.74% tribal population; whereas 37.26% of the urban population. Dharampur, Kaprada and Umargaon taluka has the tribal population. Tribes resides here are *Varli, Kukana, Dhodiya and Nayka*. District has varied patches of natural vegetations and landscape and, has good spiritual places conserved by indigenous tribes. There are 480 SGs in Valsad district which harbor distinct herb, shrub, climbers and valuable tree species with local fauna diversity. Here tribals worship plants as abode of deity and performs their traditional rituals in these places known as Sacred Grove. Festivals celebrated are *Diwali, Vaughbaras, Holi, Kevda trij* and *Navratri*. Location map of the study area is given in Fig. 1.

Table 1. Six talukas in Valsad district.

No.	Name of Taluk
1	Dharampur
2	Kaprada
3	Valsad
4	Pardi
5	Umargaon
6	Vapi

Study of Sacred Groves

From six talukas of Valsad 480 Groves were identified as Sacred Groves. All the groves were categorized in three distinct zones, according to the area covered by SGs. These zones were noted as Core-I, Core-II and Core-III (Fig. 2). This categorization was done for easy management of the SGs study. According to the size and area involved - large areas SGs are kept in Core-I, medium size SGs are categorized in Core-II and single tree SGs are considered in Core-III. From 480 SGs 10% of the SGs were categorized in Core-I i.e., 48 SGs, (Table 2) which was selected for ethnobotanical documentation study. Data collection was enumerated from Bhagats (traditional healer), local people and knowledgeable person of the community residing around SGs. Tools used for data collection were interviews and photography (Fig. 3).

During field visits, plants found in SGs were recorded with its ethnobotanical and ethnomedicinal uses, used in varied ailments. Reported Plant species are arranged alphabetically followed by plant details viz. local name, scientific name, habit and family name.

Plants were identified with the help of plant Taxonomist & standard floras; Gujarat flora (1978) and Flora of Maharashtra Vol-I & II. Collected plant species were submitted as herbarium in Government science college Vankal, Mangrol, Surat.

Table 2. List of SGs recorded from Core-I.

SL	Name of SG	Name of Village	Age of SG	Location
1	Rajeswar Mahadev SG	Tiskari	100	20° 29' 57" N Latitude 73° 7' 59" E Longitude
2	Tugleswar Hanumanji SG	Dhamani	100	20° 26' 10" N Latitude 73° 14' 12" E Longitude
3	Vajeswari mavli mata SG	Savarmal Amba Talat	200	20° 34' 10" N Latitude 73° 16' 29" E Longitude
4	Tasmandari mavli- Mahadev SG	Kangavi	150	20° 33' 36" N Latitude 73° 14' 14" E Longitude
5	Luhari Mavli SG	Luhari	200	20° 32' 53" N Latitude 73° 15' 21" E Longitude
6	Sonazar-Rupazar mavli SG	Chichoazar	150	20° 30' 10" N Latitude 73° 13' 51" E Longitude
7	Gam devi -Vaghbaras SG	Shishumal	100	20° 32' 13" N Latitude 73° 23' 28" E Longitude
8	Ukhari SG	Makadban	300	20° 28' 5" N Latitude 73° 15' 11" E Longitude
9	Gungai mavli mata SG	Makadban	100	20° 27' 12" N Latitude 73° 12' 43" E Longitude
10	Church SG	Pipalpada	50	20° 33' 8" N Latitude 73° 26' 59" E Longitude
11	Varun dev- Adinath dev SG	Piprol	150	20° 31' 5" N Latitude 73° 19' 26" E Longitude
12	Mavli mata SG	Nandgam	200	20° 22' 24" N Latitude 73° 18' 7" E Longitude
13	Gam devi SG	Panchvera	150	20° 22' 38" N Latitude 73° 23' 49" E Longitude
14	Mavli mata SG	Huda	200	20° 18' 23" N Latitude 73° 24' 29" E Longitude
15	Mavli mata SG	Vavar	200	20° 20' 40" N Latitude 73° 23' 29" E Longitude
16	Mavli mata SG	Ghotan	200	20° 19' 17" N Latitude 73° 21' 5" E Longitude
17	Mavli mata SG	Aslon	200	20° 13' 32" N Latitude 73° 20' 17" E Longitude
18	Mavli mata SG	Narwad	200	20° 17' 38" N Latitude 73° 18' 55" E Longitude
19	Vaghdev SG	Karjun	200	20° 16' 3" N Latitude 73° 17' 17" E Longitude
20	Mavli mata SG	Kolvera	250	20° 16' 22" N Latitude 73° 15' 52" E Longitude
21	Mavli mata SG	Varoli Talat	300	20° 22' 26" N Latitude 73° 7' 41" E Longitude
22	Mavli mata SG	Dighi	200	20° 9' 20" N Latitude 73° 15' 10" E Longitude
23	Savri devi mavli -Vagh dev SG	Nagar	200	20° 9' 26" N Latitude 73° 6' 41" E Longitude
24	Gam devi SG	Pendhardevi	200	20° 14' 33" N Latitude 73° 11' 52" E Longitude
25	Mavli mata SG	Matuniya	300	20° 25' 7" N Latitude 73° 15' 19" E Longitude
26	Gam dev SG	Chandvegan	100	20° 21' 50" N Latitude 73° 12' 55" E Longitude
27	Gam dev SG	Moti Vahiyad	200	20° 27' 0" N Latitude 73° 10' 22" E Longitude
28	Gam dev SG	Kakad kopar	200	20° 22' 46" N Latitude 73° 4' 28" E Longitude
29	Gam dev SG	Ozar	170	20° 20' 25" N Latitude 73° 4' 31" E Longitude
30	Arnai Sita kund-Mahadev SG	Arnai	250	20° 29' 37" N Latitude 73° 11' 49" E Longitude
31	Laxmi mata SG	Velvach	80	20° 28' 21" N Latitude 73° 5' 46" E Longitude
32	Kalimata-ambamata SG	Parnera	90	20° 25' 41" N Latitude 72° 54' 14" E Longitude
33	sai temple SG	Tithal	43	20° 35' 10" N Latitude 72° 53' 53" E Longitude
34	Swaminarayan SG	Tithal	42	20° 36' 43" N Latitude 72° 53' 29" E Longitude
35	Jalarambapa SG	Faladhra	52	20° 32' 0" N Latitude 73° 5' 34" E Longitude
36	Brahmadev SG	Umarsadi	80	20° 30' 18" N Latitude 72° 54' 39" E Longitude
37	Brahmadev SG	Ponya	80	20° 29' 56" N Latitude 72° 56' 28" E Longitude
38	Brahmadev SG	Motiwada	100	20° 29' 9" N Latitude 72° 55' 55" E Longitude
39	Bhavani mata SG	Motiwada	100	20° 29' 4" N Latitude 72° 55' 53" E Longitude
40	Mahadev - (Gangaji) SG	Palsana	100	20° 29' 16" N Latitude 72° 55' 7" E Longitude
41	Tarkeswar mahadev temple	Dumlav	60	20° 25' 37" N Latitude 72° 59' 14" E Longitude
42	Laxmi mata SG (Arjungadh)	Bagwada	900	20° 25' 38" N Latitude 72° 54' 57" E Longitude
43	Someswar mahadev SG	Sarai	70	20° 16' 59" N Latitude 72° 48' 21" E Longitude
44	Vairasi mata ji SG	Dhimsa kankariya	100	20° 12' 39" N Latitude 72° 49' 15" E Longitude
45	Jal devi mata SG	Nandigam	100	20° 13' 48" N Latitude 72° 52' 54" E Longitude
46	Vaghodiya bapa - Brahma dev SG	Anklas	100	20° 14' 5" N Latitude 72° 55' 40" E Longitude
47	Bhilkay mata SG	Bhilad	100	20° 16' 27" N Latitude 72° 53' 55" E Longitude
48	Gayeswar Gupteswar mahadev SG	Borigam	659	20° 18' 5" N Latitude 72° 57' 52" E Longitude

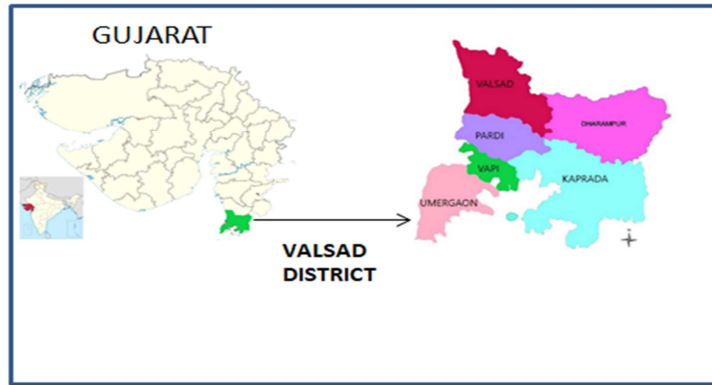


Fig. 1. Map of Valsad district

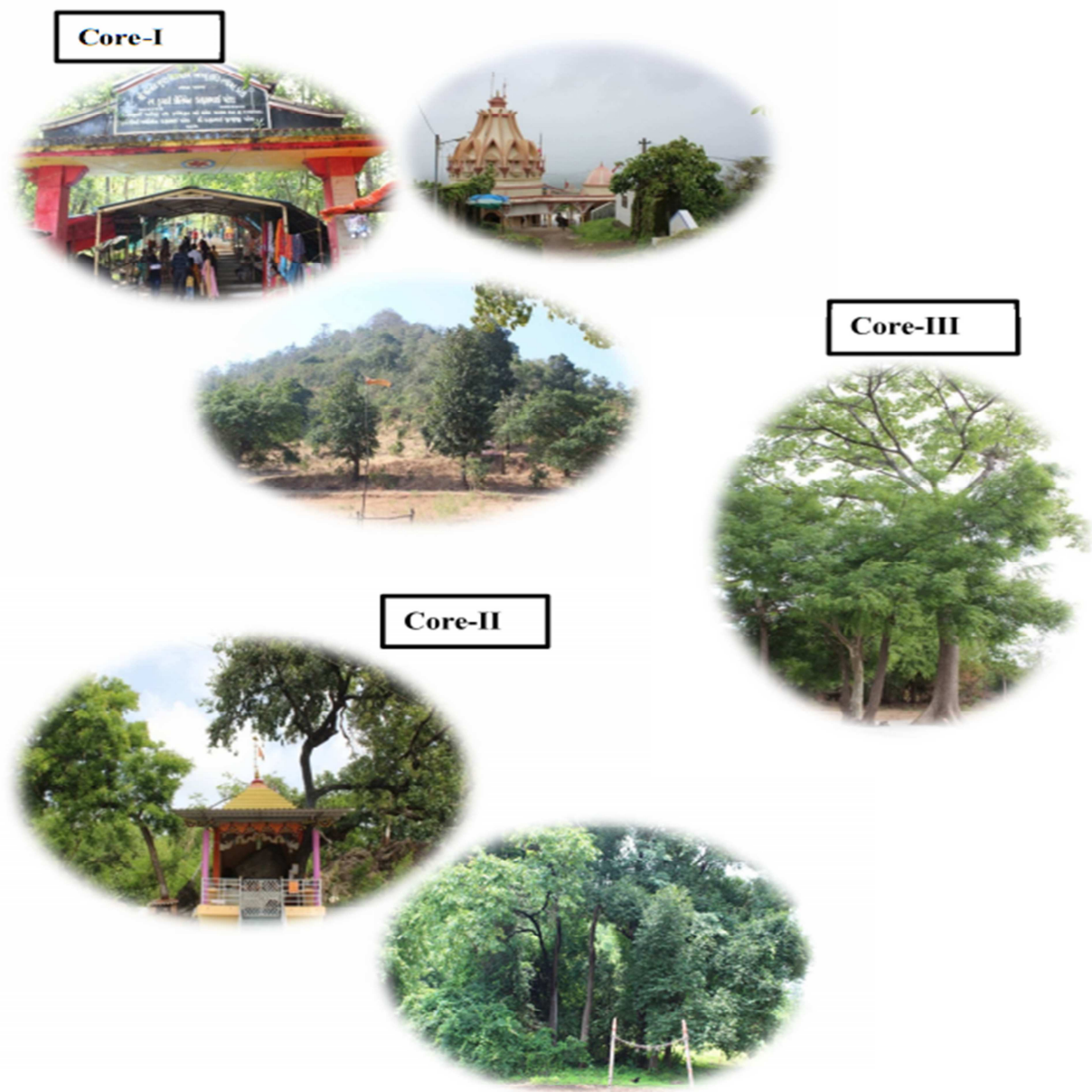


Fig. 2. Showing Core-I, II, & III Sacred Groves from Valsad District



Fig. 3. Data collection from Traditional Healers by Interview method.

Result and discussion

The present study recorded 480 SGs from whole Valsad District. 48 SGs were recorded in Core-I. The traditional knowledge of ethnobotany & ethnomedicine from local tribes, were collected through interviews. At first friendship/intimacy with the tribals was generated to win their trust and maintaining the relationship with them. Education about the present research study and conservation of plant biodiversity was provided to them. After that, interview was conducted for extraction of flawless information from them. All the SGs in the district are associated with religious and traditional belief system. These traditional practices have generated a taboo and/or belief system, which prevails strongly among these tribes that harming flora and fauna within SGs led to the bad luck for them. Plant species were identified and collected after taking

permission from the headman of the SGs, 182 plant species belonging to 63 families were recorded in these 48 SGs that were utilized by Bhagats and local inhabitants, to cure different ailments. 70% of traditional healers were in their 60's age (senior citizen) and, has strong bond and attachment with their ethnic traditions, staunch in following the tradition of folk medicine, instead of modern medicines. The local inhabitants consult this *Bhagats* for curing of various ailments such as diarrhea, stomachache, bone fracture, scorpion sting, snakebite, fever, digestion problems, cough, cold, asthma and so on, instead of going to doctor for treatment. The list of ethnomedicinal claims from *Bhagats* are recorded, plant species used by them and present in SGs are given in Table 3 arranged alphabetically along with details like local name, scientific name, family, habit, parts used and claims for varied ailments.

Table 3. List of ethno-medicinal plants; (T-tree, S-shrub, H-herb and C-climber).

SN	Local name	Scientific name	Family	Useful parts	Ethno-medicinal Claims	Habit
1	Bili	<i>Aegle marmelos</i>	Rutaceae	Root, leaves, Fruits	Leaves juice is given in fever and helminthiasis. Root decoction is given in fever. Fruits juice is given as cooling agent.	T
2	Kaju	<i>Anacardium occidentale</i>	Anacardiaceae	Stem bark	Stem bark is used in dysentery. Stem bark is soaked in water and drink on empty stomach at early morning as health tonic for children.	T
3	Jungli Bhindo	<i>Abelmoschus moschatus</i>	Malvaceae	Root	Root paste is applied on wound or cut. Root is rubbed on finger cut.	H
4	Chanothi	<i>Abrus precatorius</i>	Fabaceae	Leaves, root	Root paste is given with water in cough. Root powder is sniffed in headache.	C
5	Australian baval	<i>Acacia auriculiformis</i>	Fabaceae	Stem bark	Stem bark powder is used in cough.	T
6	Kher	<i>Acacia catechu</i>	Fabaceae	Stem bark	Stem bark is used to mouth ulcer, Diarrhea and body pain	T
7	Kanti/kantadi	<i>Acacia ferruginea</i>	Fabaceae	Stem bark	Powder of stem bark is used in skin disease.	T
8	Baval	<i>Acacia nilotica</i>	Fabaceae	Stem, bark, leaves	Young stem is chewed to cure toothache and Pyorrhea. Paste of bark is applied on vitiligo. Young leaves are chewed in mouth ulcer, it acts as cooling agent or mouth freshener. Bark powder mixed with peanut oil and oil of monitor lizard applies on burn part of body.	T
9	Andhedi	<i>Achyranthes</i>	Amaranthaceae	whole plant	Ash of whole plant is helpful in	H

SN	Local name	Scientific name	Family	Useful parts	Ethno-medicinal Claims	Habit
		<i>aspera</i>			asthma and cures cough and breathing problems. Leaves paste with honey is given in fever. Powder of leaves with black pepper is given in cough. Seeds are used in impregnation.	
10	spilenthus	<i>Acmella calva</i>	Asteraceae	Root, Leaf, Flower	Root, Leaves and Flowers used in toothache. Small piece of root is tied on ear to cure toothache.	H
11	Aasay	<i>Adiantum capillus-veneris</i>	Pteridaceae	Stem/Petiole	Petiole is tied on head to cure migraine or headache.	H
12	Dhedhda	<i>Aeschynomene americana</i>	Fabaceae	Latex	latex or milky juice is applied on boils	H
13	Kuvarpathu	<i>Aloe barbadensis</i>	Xanthorrhoeaceae	Leaf	juice of leaf pulp filtered with clean clothes and used as eardrop to cure earache. Leaf pulp applies on skin burn.	H
14	Jaljambu	<i>Alternanthera sessilis</i>	Amaranthaceae	Stem	stem nodes are used in treatment of kidney stone.	H
15	Tandarjo /lal bhaji	<i>Amaranthus blitum</i>	Amaranthaceae	Stem, Leaf	Leaf is used as blood purifier. Stem and leaf is also helpful in black discharge during menstrual periods.	H
16	Safed kantado tandarjo	<i>Amaranthus spinosus</i>	Amaranthaceae	Root, Leaf	Root and leaves are used as medicine for white vaginal discharge in women.	H
17	Junglee suran	<i>Amorphophallus sylvaticus</i>	Araceae	Leaf	Leaves used to cure versicolor (karodiyo) disease.	H
18	Bendra	<i>Ampelocissus latifolia</i>	Vitaceae	Root	Root bulb is used to tie on tuber or swelling part of body.	C
19	Bhangrut	<i>Anisomeles indica</i>	Lamiaceae	Leaf	Leaf paste is applied on forehead to cure headache. Leaf are boiled in water and used to take bath to cure body pain	H
20	Sitafal	<i>Annona squamosa</i>	Annonaceae	Fruit, Leaf	Leaves are used as insecticide for cattle. Leaf juice is given in stomachache and diarrhea. Crushed seeds are mixed with hair oil to removes lice from hair. Seed is used in diabetes.	T
21	Dhavdo	<i>Anogeissus latifolia</i>	Combretaceae	Stem bark, seed	Bark powder is given with water to cure body pain. Stem bark is soaked in water and given to cure constipation or to make thin feces. Seed smoke is helpful to cure chicken pox disease.	T
22	Sopari	<i>Areca catechu</i>	Areaceae	Fruit	Fruit is used in mouth ulcer, chewed as mouth freshener.	T
23	Darudi	<i>Argemone mexicana</i>	Papaveraceae	Seed, Latex, Leaf	Seed oil is mixed with sugar and given in cough and asthma. Seed smoke inhale from mouth is helpful in decayed teeth, and helps to removes teeth worms. Latex is apply on tongue it is helpful in stammering problem. Two drop of leaf juice with sesamum oil is helpful in earache.	H
24	Ulta sulti/ghavel/avdi savdi	<i>Argyreia nervosa</i>	Convolvulaceae	Root, stem, Leaf	Root and stem powder is applied on cracked bones. Root powder is given to goat, to stimulate secretion of milk. Leaf is used to cure cut or wound.	C
25	Keni	<i>Ariopsis peltata</i>	Araceae	Leaf	Leaves are rubbed on skin disease.	H
26	Satavri/sasl	<i>Asparagus</i>	Asparagaceae	Root	Root powder with half cup of milk	C

SN	Local name	Scientific name	Family	Useful parts	Ethno-medicinal Claims	Habit
	a ni gugali	<i>racemosus</i>			is given two times in a day to stimulate secretion of milk in lactating mother.	
27	Kadvo limdo	<i>Azadirachta indica</i>	Meliaceae	Leaf, Fruit	Leaves juice with sugar is given as cooling tonic. Leaf juice is also cure jaundice and fever. Poulitice of leaves paste with honey is fomented on swelling or protuberance helps to reduce pain and swelling. Seed oil removes lice from hair. Leaves are boiled in bath water to cure chickenpox.	T
28	Bhendi	<i>Azanza lampas</i>	Malvaceae	Root	Root powder is used to drink in jaundice.	H
29	Lota bamboo	<i>Bambusa tuldoides</i>	Poaceae	Apical Stem	Young apical stem pest is applied in teeth to cure toothache	T
30	Rankarvi	<i>Barleria cuspidata</i>	Acanthaceae	Stem Node	Stem nodes are tied on neck in jaundice.	S
31	Aasud	<i>Barleria gibsonii</i>	Acanthaceae	Stem	Five nodes wore as necklace to cure infertility in women. Seven nodes are tied on neck to cure weakness or illness in children.	H
32	Hindro/ asondaro	<i>Bauhinia racemosa</i>	Fabaceae	Stem Bark	Stem bark is used in jaundice and piles.	T
33	Sindoor	<i>Bixa orellana</i>	Bixaceae	Stem Bark	Stem bark is used in indigestion problems	S
34	Kalhar	<i>Blumea eriantha</i>	Asteraceae	Leaf, Root	Pest of fresh leaves is applied on cut or wound, to stop bleeding. Roots are eaten as cooling tonic in body heating.	H
35	Satodi	<i>Boerhavia diffusa</i>	Nyctaginaceae	Leaf, Stem, Root	Leaf, stem and root are used to cure kidney stone.	H
36	Shimdo /samar	<i>Bombax ceiba</i>	Malvaceae	Bark, Spikes	Bark is used to cure dysentery. Bark with spike is chewed in mouth ulcer.	T
37	Boganvel	<i>Bougainvillea spectabilis</i>	Nyctaginaceae	Root	Root is used in piles.	S
38	Hakhdo /asant	<i>Bridelia retusa</i>	Phyllanthaceae	Fruit, Stem bark	Stem bark powder is used to cure migraine. Ripe fruits help in headache.	T
39	Kesudo	<i>Butea monosperma</i>	Fabaceae	Leaf, Bark	Bark powder is given with honey in cough and cold. Leaves are used in piles and urinary disorders. Leaves poulitice is fomented on swelling and piles	T
40	Akdo	<i>Calotropis procera</i>	Apocynaceae	Leaf, Latex, Stem	Make ash of dry leaves and make paste with ghee (filtered butter) of cow milk is apply on wound and also salved on dermatitis. Powder of root bark mixed with big sugar (khada sakar) is given in dysentery. A slightly heated yellow leaf is tied on stomach and head to cure stomachache and headache.	S
41	Kena	<i>Canna indica</i>	Cannaceae	Root Bulb	pest of root bulb is applied on swelling or protuberance bump	H
42	Chamatodi/ vaghat	<i>Cansjera rheedei</i>	Opiliaceae	Root	Root is used to cure white discharge or spermatorrhoea	C
43	Kumb	<i>Careya arborea</i>	Lecythidaceae	Bark	Stem bark is used to stop heavy bleeding during menstruation cycle. Fruits are used as food for cattle. Powder of stem bark applied on skin itching	T
44	Karamdi	<i>Carissa carandas</i>	Apocynaceae	Leaf, Bark	Leaves are chewed in mouth ulcer. Stem bark is used in urinary disorders. Leaf past is applied on	S

SN	Local name	Scientific name	Family	Useful parts	Ethno-medicinal Claims	Habit
45	Pili karen	<i>Cascabela thevetia</i>	Apocynaceae	Leaf	skin itching. Leaves paste is applied on vitiligo disease	S
46	Bahvo	<i>Cassia fistula</i>	Fabaceae	Fruit, Flower	Slightly heated fruit is used to foment on stomach to cure helminthiasis. Fruit is given with sugarcane juice cures jaundice. Leaf paste is applied on skin disease or dermatitis. Decoction of bark can heal throat pain	T
47	Saru	<i>Casuarina equisetifolia</i>	Casuarinaceae	Root	Root paste mixed with Garlic is applied and tied on dog bites.	T
48	Barmasi	<i>Catharanthus roseus</i>	Apocynaceae	Root	Dried root or root powder is used to cure body inflammation, body heating	H
49	khat khatumbo	<i>Cayratia trifolia</i>	Vitaceae	Stem	Vein is used to reduce swelling.	C
50	Kuddu bhaji	<i>Celosia argentea</i>	Amaranthaceae	Root	Roots are used to cure jaundice.	H
51	Marghaful/ Pevai	<i>Cheilocostus speciosus</i>	Costaceae	Leaf, Flower	Two drops of leaves juice or flower juice is used as eardrops to cure earache.	H
52	Safed musli	<i>Chlorophytum borivilianum</i>	Asparagaceae	Tuber Root, Leaf	Roots are used to control diabetes, paralysis and as aphrodisiac. Root powder is used as medicines for cattle illness.	H
53	Had sakal/ hadmudi	<i>Cissus quadrangularis</i>	Vitaceae	Leaf	Leaf and stem paste is applied on fractured bone.	C
54	Pilitilvani	<i>Cleome viscosa</i>	Cleomaceae	Leaf	Leaf juice is used as eardrop to cure toothache. Juice is applied on joints pain.	H
55	Kali gay na ful	<i>Clitoria ternatea</i>	Fabaceae	Root, Leaf, Flower	Leaves juice is helpful in acidity problems. Leaf paste is applied surrounds ears to cure earache. Flower and root paste applied on scorpion sting.	C
56	Junglee ghilodi	<i>Coccinia grandis</i>	Cucurbitaceae	Stem, Root	Vein is used to cure stomachache. Root tuber is eaten during corona pandemic as immunity booster.	C
57	Vevdi	<i>Cocculus hirsutus</i>	Menispermaceae	Leaf	One spoon of leaves juice is given in green feces or dysenter in children.	C
58	Nadiyer	<i>Cocos nucifera</i>	Areaceae	Fruit/Endocarp Shell	Ash of fruit shell is used to cure piles and ulcer. Ash is mixed with oil and applies on eyes to cure conjunctivitis.	T
59	Advi	<i>Colocasia esculenta</i>	Araceae	Bulb	Powder of dried bulb is given as medicine for blank jaundice.	H
60	Bokadvel	<i>Combretum ovalifolium</i>	Combretaceae	Stem Bark	powder of stem bark is drink on dysentery problem.	C
61	Nilgiri	<i>Corymbia citriodora</i>	Myrtaceae	Oil, Leaf	Seed oil is used in massage on joints pain. Leaves are boiled in water and it used to take bath, it cures fever and headache.	T
62	Nagful /shivful	<i>Couroupita guianensis</i>	Lecythidaceae	Flower	Flowers are used to cure stomachache	T
63	Top golo/ ravan bel	<i>Crescentia alata</i>	Bignoniaceae	Fruits	Fruit pulp is given as drink to cure stomachache in cattle. Fruit is used in tuberculosis, pandurog and helps to cure stomachache.	T
64	Jungli shan	<i>Crotolaria hirsuta</i>	Fabaceae	Root, Node, Leaf	Powder of dried nodes are applied on swelling. Leaf fumigation is given to cure heat rashes. Root nodes are wore as necklace to cure	H

SN	Local name	Scientific name	Family	Useful parts	Ethno-medicinal Claims	Habit
65	Pili musli	<i>Curculigo orchioides</i>	Hypoxidaceae	Root Tuber Or Root	jaundice. Root bulb is used in treatment of cancer also given to cattle in vomiting problems. It is used to control white vaginal discharge.	H
66	Karchond /bhuraful	<i>Curcuma inodora</i>	Zingiberaceae	Rhizome	Slightly heated rhizome is fomented on stomach in helminthiasis.	H
67	Blue-cyathocline	<i>Cyathocline purpurea</i>	Asteraceae	Flower	Ash of dried flower is applied on skin ulcer	H
68	Sisam	<i>Dalbergia sissoo</i>	Fabaceae	Leaf, Bark	Fresh leaves chewed with sugar (khadi sakar) on empty stomach, it regulates menstrual cycle and to control white vaginal discharge. Apical stem is used as food but excessive use cause miscarriage in women. Stem water is used as eardrop it helps in ear vein blockage.	T
69	Vaas	<i>Dendrocalamus strictus</i>	Poaceae	Stem Water, Apical Stem	Slightly heated stem with turmeric powder is given to cure heartburn or acidity problem.	T
70	Bendval	<i>Dendrophthoe falcata</i>	Loranthaceae	Stem	small piece of root is tied on ear or neck to cure jaundice fever.	H
71	Dabhdo	<i>Desmostachya bipinnata</i>	Poaceae	Leaf, Root	Stem and leaves are used to stimulate secretion of milk in women (when mother did not able to produce milk). Leaves paste is useful in feet cracks.	H
72	Dudh vavri vel	<i>Dioscorea hispida</i>	Dioscoreaceae	Leaf	Leaves and bark past is applied on scorpion bite	C
73	Timru	<i>Diospyros melanoxylon</i>	Ebenaceae	Leaf, Seed	Nine seeds are drink with milk or water on empty stomach to cures infertility in women	T
74	Shivlingi /Isarpendhi vel	<i>Diplocyclos palmatus</i>	Cucurbitaceae	Fruit, Seed	Paste of stem is applied on joint pain or body pain	C
75	Ekoth	<i>Dregea volubilis</i>	Apocynaceae	Stem	Seed flour mixed with powder of dried flowers of Suran (<i>Amorphophallus campanulatus</i>) and water to make small round pills is taken orally to regulate menstruation cycle.	C
76	Nagli	<i>Eleusine coracana</i>	Poaceae	Seed	Stem bark is given to drink in green feces or dysentery in child	H
77	Edangi	<i>Embelia tsjeriam-cottam</i>	Primulaceae	Stem Bark	Seeds are used to cure jaundice. Root and fruit is helpful in digestion problems	C
78	Juglee kela/ kavdal	<i>Ensete superbum</i>	Musaceae	Root, Fruit, Seed	Root powder is used to drink to cure jaundice. Small pieces of stem nodes are wore as mala in jaundice. Root powder mixed with root powder of <i>Mallotus polycarpus</i> tree and given with water on snake bite.	S
79	Dashmul	<i>Eranthemum roseum</i>	Acanthaceae	Root, Stem	Powder of stem bark is mixed with stem bark powder of <i>Tectona grandis</i> is given to cure Asthma and to regulate menstrual periods.	H
80	Pangaro	<i>Erythrina variegata</i>	Fabaceae	Bark	Leaves are useful for pregnant women to produce milk after delivery.	T
81	Dudhri	<i>Euphorbia heterophylla</i>	Euphorbiaceae	Leaf	Small piece of root is tied on ear to cure toothache. Fresh leaves are used to fomentation on swelling.	H
82	Thor	<i>Euphorbia nerifolia</i>	Euphorbiaceae	Root, leaf	Slightly heated leaf tied on feet to cure feet pain.	S

SN	Local name	Scientific name	Family	Useful parts	Ethno-medicinal Claims	Habit
83	Payar	<i>Ficus amplissima</i>	Moraceae	Bark	Bark powder is used as cooling tonic for stomach pain.	T
84	Jungli pipado/Khadak payar	<i>Ficus arnottiana</i>	Moraceae	Bark	Stem bark is used to cleaning of uterus.	T
85	Vad	<i>Ficus benghalensis</i>	Moraceae	Aerial Root, Bark, Fruit	Prop roots are chewed to makes teeth strong. Dried fruits are given for impregnation in women . It has aphrodisiac effects for men and women. Decoction of bark helps in healing of wound or ulcer.	T
86	Kharot /karvat	<i>Ficus exasperata</i>	Moraceae	Stem Bark	Stem bark is used to cure kidney stone	T
87	Junglee umaro	<i>Ficus hispida</i>	Moraceae	Stem Node, Bark	stem node and bark powder is used to regulate menstrual cycle.	T
88	Umaro	<i>Ficus racemosa</i>	Moraceae	Whole Plant	Root extract mixed with sugar (sakar) given in cholera fever. Ripe fruits are eaten as cooling tonic and cure urinary problems. Latex is apply on tubercance. Leaves paste applies on scorpion bite. Five drops of leaves juice is used as nasal drop to stop nose bleeding. Ash of bark mixed with (ghee) clarified butter is applied on wound and swelling. Bark powder taken orally twice in a day, it cures vitiligo. Small piece of root is put in teeth for tooth extraction and used to cure toothache.	T
89	Pipado	<i>Ficus religiosa</i>	Moraceae	Bark, Leaf, Fruit	Root and stem bark is used to cure piles	T
90	Pipdi	<i>Ficus rumphii</i>	Moraceae	Root, Stem, Bark	Bark powder is used to cure diarrhea. Stem bark is soaked in water and used to drink as cooling tonic. It is helpful in feet pain.	T
91	Kakad	<i>Garuga pinnata</i>	Burseraceae	Bark	Root and nodes are useful to stimulate secretion of milk in women and also used for cow, buffalo.	C
92	Ukshi	<i>Getonia floribunda</i>	Combretaceae	Root	Bark powder is used as cooling tonic for heartburn or acidity. Bark is soaked in water over night and filtered water from it. It is helpful to cure menstrual pain and knee pain.	T
93	Sevan	<i>Gmelina arborea</i>	Verbenaceae	Bark	Seed oil is used in massage on swelling of jaundice. Leaves juice is used as drink to cure fever of jaundice.	H
94	Dhamna	<i>Grewia tiliifolia</i>	Tiliaceae	Bark	Powder of stem bark is used as medicine for jaundice	T
95	Kharsani	<i>Guizotia abyssinica</i>	Asteraceae	Leaf, Seed	Pest of root powder with castor oil is applied on piles.	H
96	Hed	<i>Haldina cordifolia</i>	Rubiaceae	Stem bark	Fruits are used to cure dysentery. Root powder mixed with water is given to cure jaundice or yellow fever.	S
97	Spiny bottle brush	<i>Haplanthus verticillaris</i>	Acanthaceae	Root	Stem bark is soaked in water over night and given to cattle when they are ill and not able to eat.	T
98	Marda sing/aati	<i>Helicteres isora</i>	Malvaceae	Root,FRUIT	Leaves juice is given in dizziness. Flowers are useful in growth of hairs.	S
99	Varas	<i>Heterophragma quadriloculare</i>	Bignoniaceae	Stem		
100	Jasud	<i>Hibiscus rosasinensis</i>	Malvaceae	Leaf, flower		

SN	Local name	Scientific name	Family	Useful parts	Ethno-medicinal Claims	Habit
101	Indrajav/kh arsing	<i>Holarrhena antidysenterica</i>	Apocynaceae	Fruit	Fruit pods are used in jaundice. It helps to reduce body swelling.	S
102	Papado	<i>Holoptelea integrifolia</i>	Moraceae	Root	Root or bark is applied as peste on teeth to cure toothache.	T
103	Shiri vel/khir vel	<i>Holostemma ada-kodien</i>	Apocynaceae	Root	Roots are used to stimulate secretion of milk for women. Root powder is drink with water to cure dysentery	C
104	Akhiriya/gadesto	<i>Hygrophila auriculata</i>	Acanthaceae	Root	Crushed roots are given to cure stomachache.	H
105	Kadvai tree	<i>Hymenodictyon orixense</i>	Rubiaceae	Stem	Stem bark is used to cure Malaria fever and viral fever.	T
106	Taad	<i>Hyphaene dichotoma</i>	Arecaceae	Sterile Flower	Sterile inflorescence branch is crushed and make powder is used as vasectomy for male.	T
107	Grass lily	<i>Iphigenia indica</i>	Colchicaceae	Tuber	Small tuber used for cattle to cure dysentery and mouth disease.	H
108	Nafftya	<i>Ipomoea carnea</i>	Convolvulaceae	Latex	Latex is applied on ulcer.	S
109	Lokhandi	<i>Ixora pavetta</i>	Rubiaceae	Bark, Root Bark	Stem bark or root bark is used to cure urinary inflammation.	T
110	Jetropha	<i>Jetropha curcas</i>	Euphorbiaceae	Stem	Stem is used to cure mouth ulcer.	S
111	Ardusi	<i>Justicia adhatoda</i>	Acanthaceae	Leaf, Bark, Root	Leaves are used in cold, cough and fever. Make a paste of root in water and apply on lower stomach, it helps in easy child delivery. Bark decoction is used as drink in dyspepsia or indigestion.	S
112	Kigelia	<i>Kigelia africana</i>	Bignoniaceae	Seed	Dry seed powder is used to cure kidney stone and also helpful in diabetes.	T
113	Bondaro	<i>Lagerstroemia parviflora</i>	Lythraceae	Leaf	Bark powder is helpful in stomach gas and dysentery problems.	T
114	Mahendi	<i>Lawsonia inermis</i>	Lythraceae	Leaf	Leaf paste is applies on skin infection or skin ulcer. It also helps in healing of feet crack.	S
115	Dina na pan	<i>Leea macrophylla</i>	Vitaceae	Leaf	Pest of root tuber is applied on cancer lump.	H
116	Vilayti baval	<i>Leucaena leucocephala</i>	Fabaceae	Flower, Leaf, Stem, Root	Leaves are used as fodder. It helps in increasing fat in cow milk.	T
117	Chandiyoo /chandiv	<i>Macaranga peltata</i>	Euphorbiaceae	Leaf	Latex and leaf past is applied on ulcer	T
118	Mahudo/madhad	<i>Madhuca longifolia</i>	Sapotaceae	Leaf, Latex, Stem	Seed oil is used to cure arthritis and joint pain. Slightly heated stem bark is tied on fractured bones. Poultice of slightly heated flower is used for fomentation in body pain.	T
119	Ambo /KERI	<i>Mangifera indica</i>	Anacardiaceae	Stem Bark,	Powder of dried leaves is used in dysentery and constipation. Stem bark is used to regulate heavy bleeding during menstruation cycle.	T
120	Adu fruits/adva	<i>Meyna spinosa</i>	Rubiaceae	Bark	Bark powder is used as blood purifier. Stem bark is tied on waist of pregnant lady during delivery, it makes easy delivery of child.	T
121	Borasli	<i>Mimusops elengi</i>	Sapotaceae	Leaf	Stem bark is used in fever. Fruits are eaten as cooling tonic.	T
122	Jungli kadam /kalam	<i>Mitragyna parvifolia</i>	Rubiaceae	Bark, Fruit	Stem bark is boiled in water and used to take bath after come from funeral, it reduce body pain. Bark powder is used in preparation of medicine for jaundice.	T

SN	Local name	Scientific name	Family	Useful parts	Ethno-medicinal Claims	Habit
123	Kantola	<i>Momordica dioica</i>	Cucurbitaceae	Bark	Root tubers are useful in snake or scorpion sting	C
124	Aaley/noni	<i>Morinda citrifolia</i>	Rubiaceae	Root Tubers	Fruits are used in preparation for medicine of cancer. Paste of bark powder is applied on wound and also used in cough.	T
125	Saragvo	<i>Moringa oleifera</i>	Moringaceae	Fruit,Bark,Root	Root powder is helpful in thyroid disease. Fruit is eaten as blood purifier. It is helpful in blood pressure and joint pain.	T
126	Koyli /kavach	<i>Mucuna pruriens</i>	Fabaceae	Root, Seed	Crushed roots are drink with milk for impregnation. Seed paste is applied on swelling or tumor.	C
127	Kamal	<i>Nelumbo nucifera</i>	Nelumbonaceae	Flower	Flower juice is given to 2-3 month pregnant women to cure stomachache.	H
128	Kadam	<i>Neolamarckia cadamba</i>	Rubiaceae	Fruits, Bark	Fruits with cumin seed and sugar (Khada sakar) are given to children on stomach gas. Bark juice with lemon juice is applied around eyes is helpful in cataract eyes or redness of eyes.	T
129	lal Karen	<i>Nerium indicum</i>	Apocynaceae	Root	Make paste of root in water and apply on piles. Root paste is applied on scorpion sting or snake bite, it reduce poisonous effects in body.	S
130	Ganthera	<i>Neuracanthus sphaerostachys</i>	Acanthaceae	Flower	Ash of dried flowers is applied on skin ulcers and also helpful for skin disease. Pest of flower ash with castor oil is used to heal feet cracks.	H
131	Parijatak	<i>Nyctanthes arbor-tristis</i>	Oleaceae	Leaf, Seed	Make paste of seed powder in water is apply on dermatitis and useful in skin disease. Leaf juice is mixed with honey and salt is useful in helminthiasis.	T
132	Tulsi	<i>Ocimum tenuiflorum</i>	Lamiaceae	Leaf	Leaf juice is used to cure cough, cold and fever.	H
133	Tetu	<i>Oroxylum indicum</i>	Bignoniaceae	Fruit	Fruits are used as pickle in fever. Fruits are used to control heavy menstrual flow and helpful to reduce menstrual pain.	T
134	Chokha/ rice	<i>Oryza sativa</i>	Poaceae	Fruit	Decoction of boiled rice with salt is given in constipation. It is useful for stomach problems.	H
135	Dungar ni bhaji	<i>Pancreatium parvum</i>	Amaryllidaceae	Root Bulb	Dried bulbs are used as fodder in illness and constipation in cow. Root juice is drink to cure piles.	H
136	Kevdo	<i>Pandanus odorifer</i>	Pandanaceae	Root	Juice of root applies on ulcer and wound. Root is also used in fever.	S
137	Khajur	<i>Phoenix sylvestris</i>	Arecaceae	Root	Root is used in diarrhea. Small pieces of root is given as fodder for cattle to stimulate secretion of milk in cattle.	T
138	Kamboi/ Burando	<i>Phyllanthus reticulatus</i>	Euphorbiaceae	Leaf	Leaves are used as cooling tonic in inflammation of body.	S
139	Bhoyamli /Lajari	<i>Phyllanthus urinaria</i>	Phyllanthaceae	Leaf	Dried leaf is used to smoke in sore throat or throat pan. Leaf pest or powder is applied on piles.	H
140	Dungar jiru	<i>Pimpinella tomentosa</i>	Apiaceae	Leaf	Pest of leaves is useful in indigestion problems for human and also for cattle's.	H
141	Vilayti aamli	<i>Pithecellobium dulce</i>	Fabaceae	Stem Bark	Stem bark is used to cure joint pain.	T
142	Rain tree	<i>Pithecellobium saman</i>	Fabaceae	Stem Bark	Stem bark powder is used to cure stomachache.	T
143	Peelo	<i>Plumeria</i>	Apocynaceae	Leaf	Slightly heated leaf used to tie on	S

SN	Local name	Scientific name	Family	Useful parts	Ethno-medicinal Claims	Habit
	champa	<i>obtusa</i>			hand or leg pain.	
144	Pogostemon	<i>Pogostemon cablin</i>	Lamiaceae	Stem	Stem and stem nodes are used to cure jaundice	H
145	Asopalav	<i>Polyalthia longifolia</i>	Annonaceae	Bark	Crushed bark with water and milk is used to cure uterine disease. Juice of root bark is applied on anal fistula disease. Boil the leaves in water and talking bath cures rheumatic pain. Seed oil mixed with lemon juice is applied on dermatitis. Poultice of flower reduce swelling of eyes.	T
146	Karanj	<i>Pongamia pinnata</i>	Fabaceae	Whole Plant	Leaf and stem powder is applied as pest on skin ulcer. Powder of stem bark powder is used to cure jaundice. Stem bark soaked in water over night and drink to cure stomachache and also used in treatment of eye disease in cattles.	T
147	Pteris	<i>Pteris vittata</i>	Pteridaceae	Leaf, Stem	Leaf and stem powder is applied as pest on skin ulcer. Powder of stem bark powder is used to cure jaundice. Stem bark soaked in water over night and drink to cure stomachache and also used in treatment of eye disease in cattles.	H
148	Bivlo	<i>Pterocarpus marsupium</i>	Fabaceae	Stem Bark	Leaf and stem powder is applied as pest on skin ulcer. Powder of stem bark powder is used to cure jaundice. Stem bark soaked in water over night and drink to cure stomachache and also used in treatment of eye disease in cattles.	T
149	Dadam	<i>Punica granatum</i>	Lythraceae	Fruit	Fruits are used in dysentery.	S
150	Snake Jasmine	<i>Rhinacanthus nasutus</i>	Acanthaceae	Leaf, Root, Flower	Leaves and root is used for snake bite. Flower pest is applies on itching and scabies. Decayed thallus or dried thallus is used as gum in treatment of kidney stone.	H
151	Riccia	<i>Riccia huebeneriana</i>	Ricciaceae	Whole Plant	Decayed thallus or dried thallus is used as gum in treatment of kidney stone.	H
152	Diveli	<i>Ricinus communis</i>	Euphorbiaceae	Root	Root extract mixed with honey is given to children in helminthiasis	S
153	Gulab	<i>Rosa indica</i>	Rosaceae	Flower Petal	Juice of flower used as medicine to regulate menstrual cycle. Make a juice of leaves with black pepper two drop of juice is use as nasal drop to cure migraine. Fruit foam is applied on dermatitis and washed with warm water. It reduce scar of disease.	S
154	Aritha	<i>Sapindus laurifolius</i>	Sapindaceae	Leaf, Fruit, Bark	Root extract mixed with honey is given to children in helminthiasis	T
155	Ashok	<i>Saraca asoca</i>	Fabaceae	Bark	Juice of flower used as medicine to regulate menstrual cycle. Make a juice of leaves with black pepper two drop of juice is use as nasal drop to cure migraine. Fruit foam is applied on dermatitis and washed with warm water. It reduce scar of disease.	T
156	Kosim	<i>Schleichera oleosa</i>	Sapindaceae	Seed	Bark is used in uterine disease	T
157	Kuvadiyu	<i>Senna tora</i>	Fabaceae	Leaf, Root, Seed	Seed fumigation is helpful in skin irritation or etching problems.	H
158	Jungli Tal	<i>Sesamum indicum</i>	Pedaliaceae	Leaf	Paste of root and leaves are applied on dermatitis. Seed paste is applied on forehead to cure migraine.	H
159		<i>Smithia hirsuta</i>	Fabaceae	Leaf	Leaf juice is applied on boil pain.	H
160	Junglee rigan	<i>Solanum anguivi</i>	Solanaceae	Root, Seed	Leaf juice is given to cure stomachache and constipation. Root is used to cure dizziness. Seed smoke is useful for decayed tooth. Dried root powder is used to cure dry cough. Root is tie on ear to cure swelling of toothache. Seed is used to cure toothache and decayed tooth.	H
161	Ragat rohido	<i>Soymida febrifuga</i>	Meliaceae	Bark	Slightly heated bark is fomented on wound swelling. It is also used in jaundice	T
162	Kadayo/kah dod	<i>Sterculia urens</i>	Malvaceae	Root	Root powder is used as medicine for spermatorrhea or white discharge in men and women	T
163	Dudhmogri	<i>Streblus asper</i>	Moraceae	Latex	Latex is applied on sprain or wrench.	T
164	Kala jambu	<i>Syzygium</i>	Myrtaceae	Fruit, Seed	Fruits are used in indigestion	T

SN	Local name	Scientific name	Family	Useful parts	Ethno-medicinal Claims	Habit
		<i>cumini</i>			problem. Seed and fruits are useful in diabetes.	
165	Tagri	<i>Tabernaemontana divaricata</i>	Apocynaceae	Root, Flower, Bark	Root juice is used in helminthiasis disease. Flower juice is used to cures skin disease and dermatitis. Leaves are used in jaundice. Powder of dried leaves is applied on ulcer. Seed powder mixed with salt is applied on scorpion sting.	S
166	Khati aamli	<i>Tamarindus indica</i>	Fabaceae	Leaf, Fruit, Seed	Poultice of fruit pulp mixed with salt is fomented on muscular pain. Stem bark is used in medicine of jaundice. Stem bark or root is soaked in water over night and drink in morning to cure body heating.	T
167	Sag	<i>Tectona grandis</i>	Lamiaceae	Stem Bark, Root	Powder of stem bark mixed with one cup of water and two cup of milk, decoction of this mixer is given on empty stomach to cure acidity and helps in heart disease.	T
168	Arjun sadad	<i>Terminalia arjuna</i>	Combretaceae	Bark	Powder of stem bark mixed with equal weight of stem bark powder of <i>Acacia nilotica</i> and leaves powder of <i>Neem (Azadirachta indica)</i> is used as tooth paste to cure pyorrhea.	T
169	Behda	<i>Terminalia bellirica</i>	Combretaceae	Seed And Seed Oil, Bark	Yellow leaf is slightly heated with castor oil and applies on head of children in cough and cold. Root is used in jaundice. Ash of seed is applies on swelling of piles.	T
170	Bhindi nu zad	<i>Thespesia populnea</i>	Malvaceae	Leaf, Root, Seed	Stem powder is used as immunity booster tonic. Stem is soaked in water and drink on empty stomach to cure diabetes. Stem powder is helpful to cure fever, acidity and jaundice.	T
171	Galo	<i>Tinospora cordifolia</i>	Menispermaceae	Stem	Stem powder is used as drink with water on snake bite. Decoction of stem is used to cure cough and fever. Small pieces of stem are used to make 'mala' and wore by tribal people to cure jaundice and fever.	C
172	Galvel	<i>Tinospora sinensis</i>	Menispermaceae	Stem	Root is used as cooling tonic in body heating	C
173	Undhafuli	<i>Trichodesma zeylanicum</i>	Boraginaceae	Root	Fruits are eaten to cure aphthous ulcer or mouth ulcer in child	C
174	Jungli parvad	<i>Trichosanthes cucumerina</i>	Cucurbitaceae	Fruit	Stem bark, nodes and root is useful in white vaginal discharge disease in women.	C
175	Vaghot	<i>Trichosanthes tricuspidata</i>	Cucurbitaceae	Stem Bark, Nodes, Root	Node powder is applied on cut or wound.	C
176	Pink flower weed	<i>Urena lobata</i>	Malvaceae	Stem Node	Leaf is used to cure migraine and headache.	C
177	Asivel	<i>Ventilago denticulata</i>	Rhamnaceae	Leaf	Flour is used as pest in preparation of medicine for swelling and also used for armpit lumps.	C
178	Adad	<i>Vigna radiata</i>	Fabaceae	Fruit	Fresh root bulb are eaten as food, it helps in lactation in women.	C
179	Holinda	<i>Vigna vexillata</i>	Fabaceae	Root Bulb	Decoction of bulb with black pepper, sunth and jiggery is drink to cure covid.	C
180	Nagod	<i>Vitex negundo</i>	Lamiaceae	Root, Leaf	Slightly heated leaves apply on forehead to cure headache. Two	S

SN	Local name	Scientific name	Family	Useful parts	Ethno-medicinal Claims	Habit
181	Fire flame	<i>Woodfordia fruticosa</i>	Lythraceae	Stem Bark	table spoon of leaves juice mixed with filtered butter (ghee) with powder of 8-10 seed of black pepper taken orally to cure stomach gas. Fomentation of leaf is helpful in arthritis. Small pieces of root tied on child's neck, it helps in teeth grow of child. Stem bark is used to control heavy menstrual flow. It is used to cure jaundice.	S
182	Bor	<i>Ziziphus mauritiana</i>	Rhamnaceae	Leaf, Stem bark	Bark is used in dysentery. Fresh leaves with bark powder are applied on ulcer and chronic disease.	T

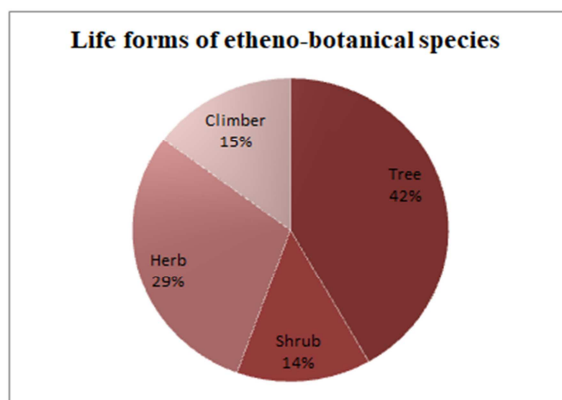


Fig. 4. Life forms of Ethno medicinal plants

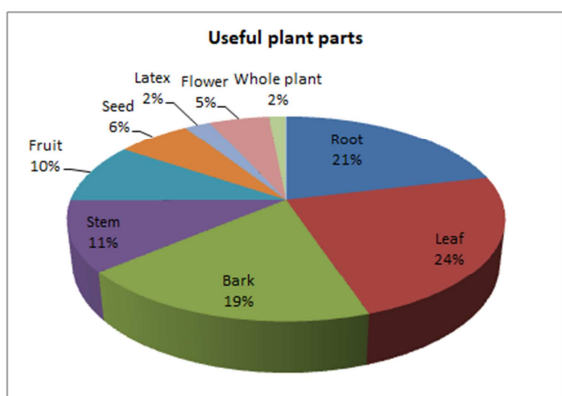


Fig. 5. Ethno-botanical uses of different part of plants

From fig. 4, it is depicted that life forms derived from 48 SGs used for the ethnomedicine by traditional healers are 42% tree sp, 14% shrubs sp, 29% small herb sp and 15% climber sp respectively. Fig. 5, depicts the parts used in making of ethnomedicine by traditional healers, 24% leaf parts are used, 22% of roots; 19% of plant bark; 12% stem; 10% from fruit; 6% seeds; 5% of flowers and only 2% of whole plant and latex.

Many traditional healers also treat domestic cattle like cow, buffalo, and goat. 10 species like *Annona squamosa*, *Careya arborea*, *Chlorophytum borivilianum*, *Crescentia alata*, *Curculigo orchioides*, *Heterophragma quadriloculare*, *Iphigenia indica*, *Phoenix sylvestris*, *Pimpinella tomentosa* and *Pterocarpus marsupium* are reported to be used in treatment of livestock. These species are used for curing disease like eye disease, indigestion problem, and stomachache due to insecticide over ingestion, to stimulate milk secretion / lactation etc. However, some traditional healer had developed small herbal garden at their home to conserve some rare, endemic and threatened species and use them for making ethnomedicine so as to stop the over use of such precious plants from wild. Around 90% of raw material is obtained from wild, for extraction of modern medicine molecules (Panda and Misra 2011; Rout and Panda 2010). Ethnobotanical and ethnomedicinal claims have created huge platform for development of new compounds to pharmaceuticals, clinical research, phytochemical industries and pharmaceuticals. The knowledge about biodiversity reflects the immemorial system of solving problems by ancient people (Malik *et al.* 2011). Many studies also reveals about local tribes used endemic plants for their treatment of various ailments especially cancer, AIDS, diabetes and other disease which is not curable by modern medicine, and also used for the livestock diseases (Sikarwar *et al.*, 2008). Traditional healer (*'Bhagat'*) makes remedial formulations from single plant or formulates by mixing many plants in specific proportions (Ragunathan and Abay 2009). Most of the traditional healer preferred to use fresh plant material (Panda and Misra 2011),

however some sundried stuff are also used in preparations of traditional medicines. Great deal of biodiversity studies from Orissa, Arunachal Pradesh, Andhra Pradesh, Chhattisgarh from India and some part of Ethiopia, says about the traditional knowledge flows from such conserved areas like SGs and many claims when tested in laboratories are successful in showing positive results and claims becomes claimant for future medicine or future pharma-molecule, which are used for several therapeutic uses such as antibacterial, antifungal, anticancer, antituberculosis, cellular protective, or modulatory properties (Rout and Panda 2010; Das and Tag, 2006; Ragunathan and Abay, 2009).

Conclusion

It is concluded that sacred groves of Valsad district are rich in biodiversity with a plenty of ethnomedicinal plants. Plant species which has been disappeared from surrounding area are found abundant in groves area. Sacred groves serve as gene pool for several valuable plant species. Many anthropogenic pressure, modernization and erosion in traditional values has heavy impact on the conservation of SGs. Therefore, systematic documentation of traditional knowledge through ethnobotanical investigation is significant for conservation and utilization of natural resources within the SGs. It is important for conservation practices as well as for new drug inventions. Conservation of ethnomedicinal plants and indigenous knowledge of locals along with traditional healing procedures is need of an hour, before SGs and traditional practices are devastated. Building a Golden triangle of traditional knowledge is urgent need for building strong bond between traditional claims and modern medicine & science. Conservational strategies awareness for biodiversity protection and promotion of ecotourism and traditional health benefit tourism will lead to the economic development in rural areas.

Acknowledgement

We are thankful to renowned Taxonomist for their valuable help in identifying the plant species. We thank Dr. Minoo Parabia, Ex-HOD Department of Biosciences, Veer Narmad South Gujarat University, Surat; Dr

Santosh Yadav plant taxonomist, botanical advisor to the Serenity botanical garden, Gandhinagar and the Retreat Garden, Ahemdabad; Dr Sandeep Patel Assistant Professor, Government Science College, Daman.

References

- Anbarashan, Munisamy, Narayanaswamy Parthasarthy, Anbarashan Padmavathy.** 2011. "Ethno-Floristic Survey in Sacred Groves, Pudukottai District, Tamil Nadu- India." *Journal of Medicinal Plant Research* **5(3)**, 439-43.
- Bhakat RK, Sen UK.** 2008. "Ethnomedicinal Plant Conservation Through Sacred Groves." in *Tribes and Tribals, Special* **2**, 55-58.
- Das AK, Hui Tag.** 2006. "Ethnomedicinal Studies of the Khamti Tribe of Arunachal Pradesh." *Indian Journal of Traditional Knowledge* **5(3)**, 317-322.
- Khumbongmayum Ashalata Devi, Khan ML, Tripathi RS.** 2005. "Ethnomedicinal Plants in the Sacred Groves of Manipur." *Indian Journal of Traditional Knowledge* **4(1)**, 21-32.
- Madharia Preeti and Jahan Aafreen.** 2015. Ethnomedicinal plants and their Conservation in Chhattisgarh State: Review and Perspectives. *IOSR Journal of Environmental Science, Toxicology and Food Technology* **1(4)**, 46-50.
- Malik, Akhtar H, Khuroo Anzar A, Dar GH, Khan ZS.** 2011. "Ethnomedicinal Uses of Some Plants in the Kashmir Himalaya." *Indian Journal of Traditional Knowledge* **10(2)**, 362-366.
- Mohammed Rahmatullah, Das Anuj Kumar, Md Ariful Haque Mollik, Jahan Rownak, Khan Mujib, Chowdhury Majeedul H, Rahman Taufiq.** 2009. "An Ethnomedicinal Survey of Dhamrai Sub-District in Dhaka District, Bangladesh." *American-Eurasian Journal of Sustainable Agriculture* **3(4)**, 881-888.

Panda, Anima, Misra Malaya K. 2011. "Ethnomedicinal Survey of Some Wetland Plants of South Orissa and Their Conservation." *Indian Journal of Traditional Knowledge* **10(2)**, 296-303.

Pooja Sharma, Virender K Santvan, Sharma Arti, Sharma Bhagwati P. 2014. "Research Article Research Article." *Global J Res. Med. Plants & Indigen. Med* **3(4)**, 154-164.

Pradhan, Antaryami, Satyendra Prasad Mishra, Niranjan Behera. 2016. "An Ethnomedicinal Survey of Medicinal Plants from a Sacred Forest of Western Odisha, India." *International Journal of Phytomedicine* **8(3)**, 325-32.

Ragunathan Muthuswamy, and Abay Solomón Mequanente. 2009. "Ethnomedicinal Survey of Folk Drugs Used in Bahirdar Zuria District , Northwestern Ethiopia." *Indian Journal of Traditional Knowledge* **8(2)**, 281-284.

Rout SD, Panda SK. 2010. "Ethnomedicinal Plant Resources of Mayurbhanj District, Orissa." *Indian Journal of Traditional Knowledge* **9(1)**, 68-72.

Sikarwar RLS, Pathak Bharat, Jaiswal Anil. 2008. "Some Unique Ethnomedicinal Perceptions of Tribal Communities of Chitrakoot , Madhya Pradesh." *Indian Journal of Traditional Knowledge* **7(4)**, 613-617.