Ayurvedic efficacy of the medicinal plants utilized by Rabari tribes in Kachchh, Gujarat: An Ethno-botanical Study

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Abstract

Known for owing sheep and camels, the people of the *Rabari* tribal community have been practicing the traditional herbal system of medicine for ages and have not been much documented due to their nomadic lifestyle. *Nomadism;* is a way of life of people who do not continually live in the same place but move cyclically or periodically. It is distinguished from migration which is non-cyclic and involves a total change of habitat. This paper enlists the medicinal plants (with their IUCN conservation status globally) used by the local healers of the *Rabari* community to cure various diseases rampant in the villages of Kachchh, Gujarat. The study has documented 75 medicinal plants belonging to 36 botanical families utilized for various herbal formulations. Fabaceae family has been the most documented botanical family (12/36) followed by Malvaceae (5/36), Boraginaceae, Cucurbitaceae, and Convolvulaceae (4/36) followed by many others like Asteraceae, Poaceae, Menispermaceae, Euphorbiaceae, etc. Out of the 75 documented medicinal plants, 27% are herbs, 25% trees, 23% shrubs, 18% climbers, 4% grass, and 3% liane. Ayurvedic literature such as Charaka Samhita and Sushrutha Samhita validates 60% (45/75) of the exact herbal formulations documented in the study, whereas for other formulations though the exact validation is not available in Ayurveda but the usage of medicinal plants is duly mentioned. The present study has also documented the other uses of the same plant than the given remedy to broaden the information on the utilization of medicinal plants in herbal medicines.

Keywords: Ethno-botany, Medicinal Plants, Conservation, Rabari tribe, Kachchh

Introduction

Kachchh is the largest district in India; it alone accounts for 24 percent land of the state of Gujarat. About half of this land remains uninhabited due to the inhospitable climatic and geographical conditions. In spite of its remoteness, aridity, and harsh climate, quite magically, Kachchh has managed to be a point of confluence for nomadic pastoralists from Pakistan, Afghanistan, Turkey, and other regions of Middle East as well from regions in India. These pastoralists brought their traditions, cuisines, breed and settled down in Kachchh over centuries.

The richness of cultural diversity is also matched by a splendid variety of ecosystems; Kachchh is home to a wide variety of biodiversity and varied ecosystems such as Mangroves, Grasslands, Scrub Forests, Tropical thorn forests, wetlands, and the salt desert of Great & Little Rann. These ecosystems have afforded little or no agriculture but have housed and nurtured many pastoral communities who have developed an astounding variety of pastoral breeds, all of them faultlessly adapted to living on this low rainfall land.

Pastoralism has long been considered primitive, but new and strong evidence has started highlighting the resilience of pastoral production systems, making them valuable, especially, in the face of a rising threat of climate change. The *Rabari* community is a nomadic pastoral community indigenous to north-west India, particularly modern-day Gujarat. Traditionally, the *Rabari* kept camels but in recent times they maintain flocks of sheep and goats as well. Tradition traces their origins to the Himalayas, as the creation of Shiva and Parvati. The *Rabari* community cherishes its customs, mythology, history and ancestral heritage, which are intimately

entwined with their traditional occupation of animal keeping. The *Rabaris* form a very close-knit community, which only in recent decades has started to show signs of adapting to modern times. However, constitutional protection eludes the *Rabari*, or at best is ill-defined, owing to their nomadic lifestyle and the lack of governmental understanding (Majumdar, 2021). In the Kachchh district, the *Rabaris* follow three distinct patterns of migration, which are season-based movements: small-range migration within Kachchh; long-range migration between Kachchh and Gujarat hinterlands, and circular migration within a delimited area, outside Gujarat (Salpeteur *et al*., 2015).

Rabaris are most found in Mindiyala, a small village in the Anjar taluka of the Kachchh district, Gujarat, is home to the majority of the *Rabari* community, and is considered the biggest *Rabari* village in India. Being a nomadic tribe they keep migrating within the district for various reasons, livelihood being the most prominent rationale behind their migration. *Rabari* community is also, known for their folklore medicine to provide home herbal remedies for various diseases rampant in the village. The present study therefore has documented various herbal formulations which the local healers belonging to *Rabari* community have practiced for several years to cure diseases. The study enlists the medicinal plants documented through interpersonal communications with the healers and their herbal formulations have been duly validated following ayurvedic evidences (*Charaka samhita* and *Sushruta Samhita*) to highlight the most efficacious remedy for the disease. The objective of this paper is to revitalize the local health traditions followed by the *Rabaris*, which is receding due to modernization.

India has been a country which provides a great amalgamation of rich culture and tradition since time immemorial. Several ethno-botanical studies from the country have given effulgence to the art of curing diseases using the medicinal plants and giving the most efficacious remedy. Pandey et al., (2015) has highlighted the use of indigenous plants by mishing tribe of Assam, India, to cure various diseases (Pandey *et al*., 2015). A detailed study on how Chakma tribe of Tripura, India, practices folklore medicines has been reported. The authors have highlighted the herbal formulations used by the local healers of Chakma tribe to cure various diseases (Pandey *et al*., 2015). Significance and commercial aspects of Ethno-fishing techniques used by Baiga Tribe to improve their Livelihood in Amarkantak, Madhya Pradesh, India has been documented with an aim to showcase the art of using grass by the community to earn their livelihood (Singh & Pandey, 2015). Kachchh being an arid province of India has been bereft of much of documentation of folklore medicines irrespective of local healers of *Rabari* community practicing it for several years in Kachchh, Gujarat. There have been few studies that only enlist the medicinal plants from Kachchh but no studies document the ethnobotanical practices with special mention to *Rabaris* in Kachchh (Joshi & Soni, 2013; Patel *et al*., 2014; Patel *et al*., 2014). This encourages the significance of the present research manuscript in the existing literature to provide the documentation and assessment of medicinal plants for home herbal remedies by the local healers from the *Rabari* community.

Material and Methods

Study area

Kachchh district, a peninsula, is situated between Sindh and Saurashtra, in the north-western part of the state. It is an ancient land possessed of great antiquity, which takes its name from its geographical characteristics and topographical features resembling a tortoise. This crescent shaped region called Kachchh forms part of north-west Gujarat. It lies between the parallels of latitude 22° 44’ to 24° 42’ and the meridians of longitude 68° 10’ to 71° 55’. It is largest district in India, in terms of area and consist longest coast line of about 406 km in the state (Kachchh census, 2011). Climate of Kachchh is one of its kinds in terms of its uniqueness and extremity. With very hot summers and cold winters the district remains pleasant throughout the year catering to biodiversity values and management of natural ecosystem. The climate is mostly dry which entertains succulents (A plant adapted to arid conditions and characterized by fleshy water-storing tissues that act as water reservoirs) as an adaptation to the aridity that the district contains.

In addition to its unique climatic condition, Kachchh has red soil with very less opportunity of cultivation. The temperature at Kachchh-Bhuj district ranges from 45.8^0C (June-2011) higher in the summer and 2.0^0C (January-2011) lowest in the winter (in January Month). Maximum relative Humidity 100% and range of sea water temperature is 16.8° C to 31.8° C. The average annual rainfall is 345 mm. The district consists of two major ecosystems i.e. Great Rann of Kachchh and Little Rann of Kachchh having an area of 12,454 km^2. It mainly covers Kachchh Desert Sanctuary in Great Rann of Kachchh (GRK) and Wild Ass Sanctuary in Little Rann of Kachchh (LRK). GRK and LRK are the most saline and marshy tracts of the forest in the world (Kumar *et al*., 2017). Despite an arid region, it has a special and different plant species population status in comparison to the other deserts as it is near to the sea

due to which sea water enters the soil and leads to the underground water recharge and further entertains the existence of biodiversity which otherwise is a challenge with many other arid deserts of the world.

Target groups

The study was conducted through extensive inter-personal communications, in-depth discussions and participant observations with the traditional medical practitioners and selected knowledge holders of eight villages belonging to two taluka i.e. Nakhatrana and Lakhpat. Villages Lifri, Mata No Madh, Valka Mota, Valka Nana, Ghadani, Paneli belong to Nakhatrana whereas Dolatpar and Dayapar villages belong to Lakhpat taluka of district Kachchh.

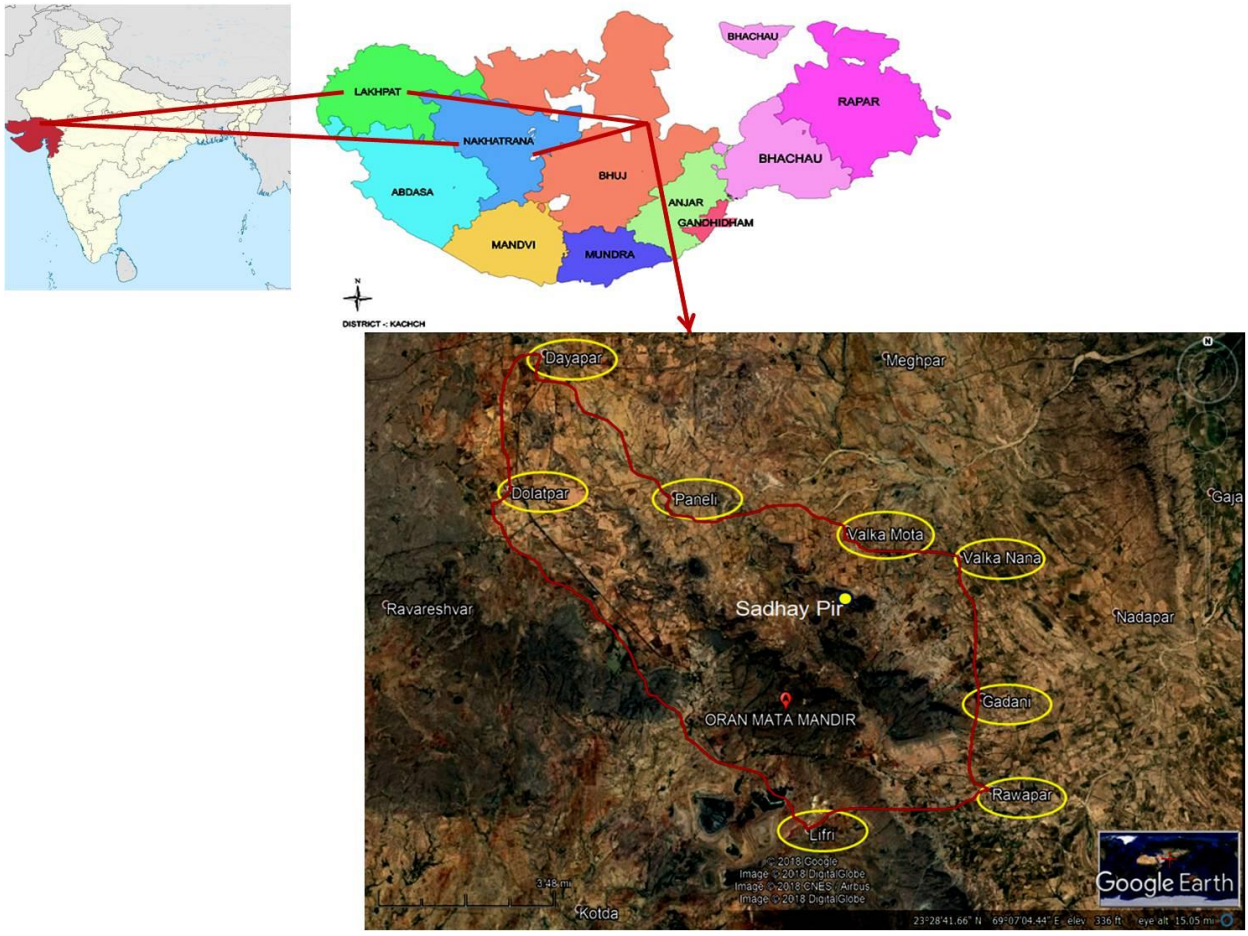


Figure 1: Map depicting the study area

The healers were visited 9 times at their respective homes in the village during the years 2018-2021 as per healer's availability. The target group of the study includes elderly and experienced local healers (both male and female) belonging to the age group of 40-80 years. The healers are a part of *Rabari* community who have been dwelling in these villages for more than 50 years and also, have been practicing the folklore medicine to earn their livelihood. The healers originally belong to Mindiyala village of Anjar taluka, Kachchh but had migrated to these villages in search of livelihood and later got settled here. Total of 23 healers (19 males and 4 females) were interviewed and their knowledge was documented. They are usually cultivators and most of them are familiar about the traditional uses of indigenous plants in various purposes. Moreover, the housewives who collect different medicinal plants for the herbal formulations are otherwise not allowed by their husbands to practice their knowledge and only males are prominently practicing the home herbal remedies. Though the present study do has identified female local healers but they are few in numbers as compared to males.

Interactions

The documentation of local health traditions commenced with structured questionnaires to get the direct information on the traditional knowledge that are prevailing and usually practiced in the community. The detailed information about the indigenous plant species used by the *Rabari* tribe was collected along with the plants parts used in the treatment of different ailments. Most of the plants were commonly occurring plants and known to most of the people. All the enumerated plant species were documented in their local names and then botanical names were identified with the help of relevant and standard literature (Patel et al., 2011; Ishnava et al., 2011).

The ayurvedic efficacy of all the formulations with medicinal plants given by the local healers has been validated by following *Charaka Samhita* and *Sushruta Samhita* (MLA, 1890; Suśruta, & Bhishagratna, 1907). The conservation status of the plants documented under ethno-botanical uses have been followed using the IUCN Red-List criteria (***https://www.iucnredlist.org/***) for sustainable utilization of these plants and cultivation of the same towards mainstreaming the long term conservation of the medicinal plants.

Results and Discussions

The study has documented 75 medicinal plants belonging to 36 botanical families (Table 1) utilized for various herbal formulations by *Rabari tribes* of Kachchh, Gujarat, India. Fabaceae family has been the most documented botanical family (12/36) followed by Malvaceae (5/36), Boraginaceae, Cucurbitaceae and Convolvulaceae (4/36) followed by many others like Asteraceae, Poaceae, Menispermaceae, Euphorbiaceae etc. Out of the 75 documented medicinal plants 27% are herbs, 25% trees, 23% shrubs, 18% climbers, 4% grass and 3% liane (Figure 1). The IUCN conservation status of the medicinal plants used by *Rabari tribes* have also been reported which is concomitant with their global status of conservation (Figure 2). The analysis of the conservation status of the medicinal plants has revealed that 63% of the documented plants are least concern followed by 13% vulnerable, 12% endangered, 8% critically endangered and 4% data deficient. This further levitates the cultivation of these indigenous plants used by the tribe for their scalability and sustainability. There is also an immediate need of the tools and techniques of sustainable utilization of medicinal plants for their long term monitoring and existentiality (Pandey & Gusain, 2016). The result also reveals that the documented herbal remedies have utilized 68% of leaves, 11% roots, 9% stem and bark, 8% flowers and fruits and 4% seeds in preparing the herbal formulation using the medicinal plants (Figure 3). The *Rabari* tribe utilizes these medicinal plants to cure various diseases which have been found to be efficacious in improving the individual's health condition. 49% of the documented herbal formulations have been given to cure common flu, fever, cough and cold, 21% for skin diseases, 12% for Heart related diseases, arthritis, bone setting, cuts and wounds, 11% to cure gynecological complexities (menstrual bleeding, micturition, abdominal pain, parturition, lactation, fertilization) and 7% to cure snake bite, scorpion bite, ulcers, stomach infection (Figure 4). As per ayurvedic evidence 37 documented medicinal plants out of 75 have been reported to be highly efficacious in immunity enhancement and are effective towards combating the bacterial, viral and fungal infections in the body.

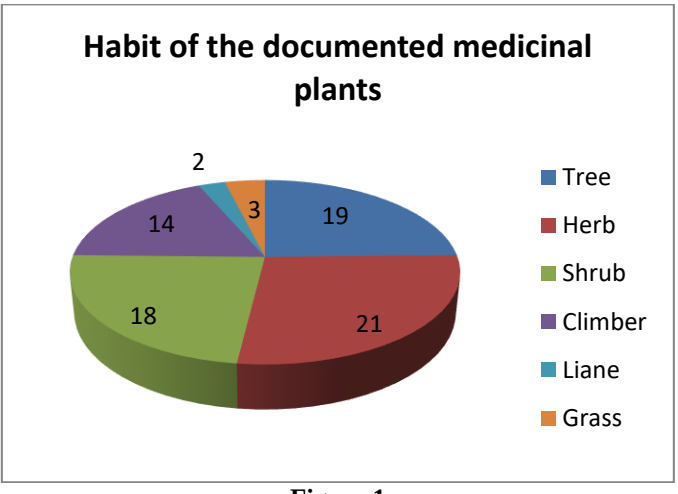
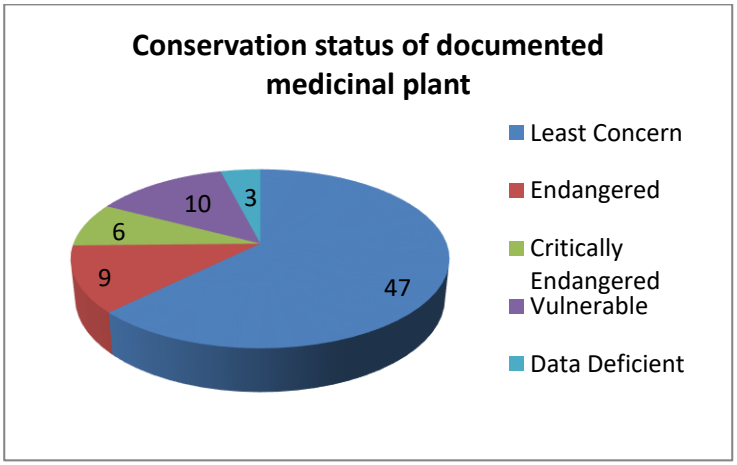


Figure 1



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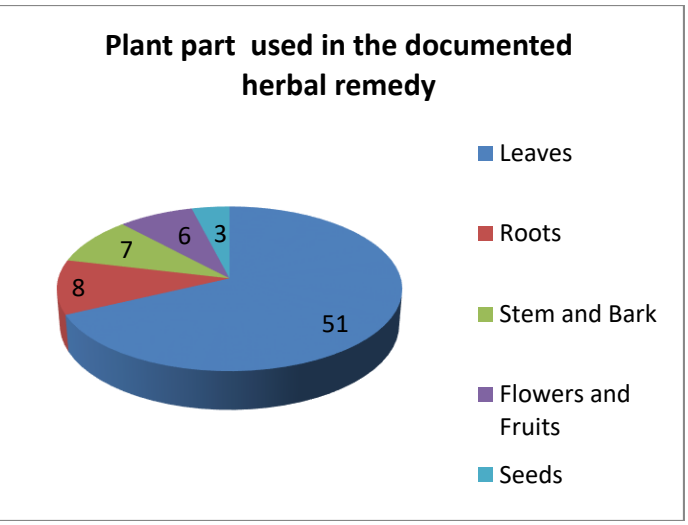

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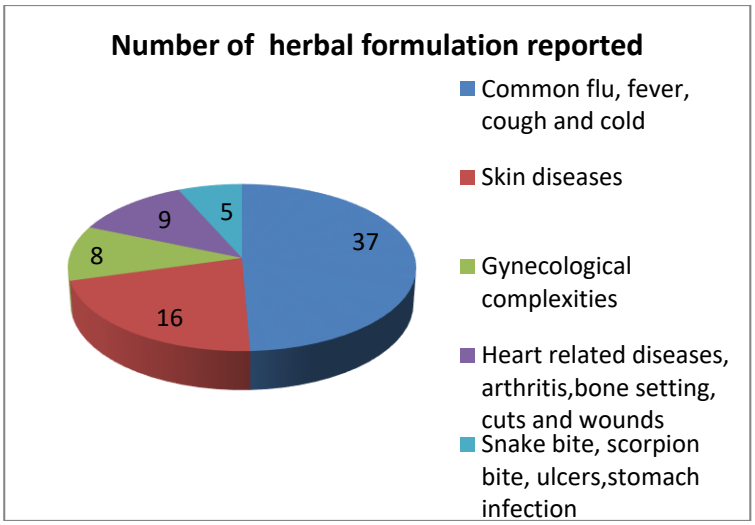

Figure 4

Ayurvedic literature such as *Charaka Samhita* and *Sushrutha Samhita* validates 60% (45/75) of the exact herbal formulations documented in the study, whereas for other formulations though the exact validation is not available in ayurveda but the usage of medicinal plant is duly mentioned. The present study has also documented the other uses of the same plant than the given remedy to broaden the information of the utilization of medicinal plant in herbal medicines.

Conclusion

The unique yet elegant and scenic, Kachchh has a natural ambience with Rann has one of the most prominent nomaic tribal community known as *Rabaris*, dwelling in this region since ages, following their culture, rituals and legends which marks the existence of the iconic and historic existence of Kachchh and its people. Their legends constitute folklores, fables, parables and many more of similar kind of oral traditions. The tribal living in the documented villages is dependent upon the herbal practices as a way to earn their livelihood, exorbitant cost of allopathic medicines and also due to their invincible faith in the old treaties and tradition. The plant part such as roots, leaves, stems, barks are used by tribal as the most significant ingredient of the herbal formulation. The local healers cultivate the medicinal plants in their backyard of the house or in the farmlands which they use in the medicines. Also, in the villages such as Valka Mota and Valka Nana, the local dwellers has a tradition of planting a medicinal plant (mostly asparagus, aloe vera and periwinkle) after a birth of the child as a mark of celebration and even after a demise in the loving memory of the departed soul. Such practices should be high recommended and implemented in the region. Today, with the advancement of industrialization and westernization there has been a huge deterioration posed to the practice of traditional healthcare medicines. In the current scenario this flow of indigenous knowledge from elder to younger generations is snagged as the young generation shows their repugnance to learn about traditional medicinal practices. The younger generations often leaves their villages because of the profound economic rigor and perks. Indigenous practices and knowledge regarding the sustainable harvest and utilization of plant resources should be documented and preserved before their presence becomes zilch, also it should be encouraged and valued for its worth and disseminated to all the masses to protect the rapid receding of the traditional knowledge.

Acknowledgements

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Table 1. A list of medicinal Plants used by the healers of Rabari community of Kachchh, Gujarat along with the Ayurvedic evidence of the remedies

S.No.	Species Name	Description of the plant: Botanical family and habit of the plant	Local Name	IUCN Red List Criteria of the plant	Documentation of herbal remedies from local healers of Rabari tribe		Ayurvedic evidence of the medicinal plant (Charaka Samhita and Sushruta Samhita)
					Plant part used	*Dosage and mode of administration (herbal formulation)*	*Ayurvedic validation of the formulation and if there is any other use*
1.	*Abutilon pannosum* (Forst. f.) Schlect.	Malvaceae, Perennial shrub	Dabaliar	Least Concern	Seeds, Roots , Flower	Root juice antilithic; leaf juice stypic, applied to cuts and sores, externally in ague.	The given formulation is validated in Charaka samhita and it is also used as a demulcent, aphrodisiac, laxative, diuretic, sedative, astringent, expectorant, tonic, anti-convulsant, anti-inflammatory, anthelmintic, and analgesic and to treat leprosy, ulcers, headaches, gonorrhea, and bladder infection
2.	*Achyranthes aspera* L. var. *argentea*	Amaranthaceae, wild, perennial, erect herb	Kandhero	Least Concern	Roots and Leaves	Leaves are pasted and mixed with very little amount of water and applied on the affected part in various skin diseases, twice a day	According to Ayurveda, the root paste of it helps to reduce itching, skin rashes when applied externally due to its property of balancing Vata and Kapha. The juice of *Achyranthes aspera* leaves help in healing of wound and ulcer.
3.	*Althea rosea* (L.) Cav.	Malvaceae, Cultivated herb	Gul Kheru	Least Concern	Roots and Flowers	2-3 leaves are finely pasted and mixed with ½ liter Luke warm water and taken 4-5 times per day(for infants its only 2-3 times per day). This remedy is effective in stopping bedwetting and inflammation in the genital region of the body.	Ayurveda validates the formulation and the medicinal plant is also beneficial for chest complains, gastrointestinal disorders, boils, abscesses, skin cuts, ulcers, burns, peptic ulceration, renal calculi, kidney disorders, cough, arthritis, inflammatory

							conditions, asthma, bronchitis.
4.	*Amaranthus viridis* L.	Amaranthaceae, Terrestrial, annual, erect or somewhat prostrate herb	Adbau Rajgaro	Least Concern	Root and Leaves	Equal amount of leaf and roots are smashed and about 2 teaspoonful of juice are collected and given orally in morning in empty stomach for one week to the patient suffering from intestinal worms, abdominal pain diarrhea and menstrual bleeding.	In ayurveda medicine this plant is also used in the treatment of fever, pain, asthma, diabetes, dysentery, urinary disorders, liver disorders, eye disorders and venereal diseases.
5.	*Asparagus racemosus Wild. var. javanicus*	Asparagaceae, A small climber plant about 1- 3 m tall. It is an extensively scandent spinous, much branched under-shrub	Chini Ji val	Least Concern	Roots	Roots are pounded and 1-2 teaspoonful mucilaginous juice is taken early in the morning in empty stomach for one week in case of upset stomach (dyspepsia), constipation, stomach spasms, and stomach ulcers.	The formulation has its evidence in ayurveda and in ayurveda the plant is also used to treat depression as the roots have strong antidepressant abilities. They also impact the neurotransmitters in brain.
6.	*Azadirachta indica* A. Juss.	Meliaceae, Tree	Limbdo, Neem	Least Concern	Leaves	Leaves are grinded into a paste and mixed with very little amount of water and applied on the affected part, twice a day in case of skin diseases.	Ayurveda confirms the formulation. Other than this neem whole plant is extensively used in Ayurvedic System Medicine for various skin disorders and diabetes.
7.	*Barleria prionitis* L. var. prionitis	Acanthaceae, A bushy prickly shrub with 3-4 spines in leaf axils	Kanta Aserio	Least Concern	Leaves	Powder of dried leaves is used as antihemorrhagic, astringent, antihemorrhagic, emolument, used in hematemesis, tonic useful in fever, cough, menorrhagia, nausea, vomiting, snake bite and given to horses in cough and cold.	In Ayurveda this plant (Vajradanti) also has been used for the treatment of skin diseases, burning urination, fever, localized swelling, goiter, dental caries and act like blood purifier.
8.	*Bauhinia purpurea* L.	Fabaceae, small to medium-sized deciduous fast-growing shrub	Kanchaner	Least Concern	Bark	Bark of the tree is finely pasted, boiled and then consumed, twice per day. The formulation has been efficacious in jaundice and gastritis.	The flowers, roots and bark of the plant have been used in Ayurvedic medicinal formulations. They are laxative, astringent, and beneficial in hemorrhagic diseases, leucorrhoea and cough. Dried buds are anthelmintic, useful in piles and dysentery associated with

							blood. Flowers and flower buds are useful in treating cancer.
9.	*Bergia suffruticosa* (Del.) Fenzl	Elatinaceae, aromatic perennial herb, woody at base, prostrate or spreading, glandular-velvet-hairy	Jal jambu	Least Concern	Leaves	The leaves are dried and grinded with lukewarm water. The paste is used as poultice on sores and broken bones.	Ayurveda gives an exact remedy for this plant, used traditionally to repair bones and heal wounds.
10.	*Bidens biternata* (Lour.) Merr. and Sherff	Asteraceae, Annual herb, erect, 0.1–2 m high; stem reddish tinged	Pilu Fuladu	Least Concern	Leaves	The sap from crushed leaves is used to speed up clotting of blood in fresh wounds; a leaf decoction is used for treating headache; sap from the plant is put in the ear to treat ear infection; a decoction of leaf powder is used to treat kidney problems; and a herbal tea made from the plant decreases flatulence.	Ayurveda has reported this plant to be also effective in the treatment of tumors, inflammation/immune modulation, and diabetes, viral and microbial infections.
11.	*Boerhavia diffusa* L.	Nyctaginaceae, A hairless, prostrate perennial at first, then ascending herb	Acchi satodi	Vulnerable	Root	The roots are dried and grinded with pestle and mortar and mixed with flower paste of *Hibiscus rosa-sinensis* (Jaasood) the decoction of the aforementioned mixture is then given to the patient twice a day to cure asthma, urinary disorders, leucorrhea, rheumatism, and encephalitis.	Though the exact formulation is not available in ayurveda but it is mainly used to treat accumulation of fluids (Oedematous conditions) in the body. It is considered to be an effective "Rasayana". It is also used in the treatment of anemia and liver diseases, which is quite intuitive of the documented herbal formulation by the local healer.
12.	*Bombax malabaricum* DC.	Bombaceae, Deciduous trees; to 45 m high; bole straight, buttress 1-2 m high, armed with conical prickles; bark 20-30 mm thick	Rato Shamaro	Least Concern	Stem, Leaves	Powder of the green portion of stem is used as antihemorrhagic, astringent, antihemorrhagic, emolument, used in hematemesis, tonic useful in fever, cough, menorrhagia, nausea, vomiting, snake bite and given to horses and camels in cough and cold.	In Ayurveda System of Medicine it is used as diuretic, anti-dysenteric, emetic, anti-diarrhoeal, and aphrodisiac. It is used to treat wounds, acne, skin blemish, pigmentation, cold and cough.

13.	*Butea monosperma* (Lam.) Taub.	Fabaceae, a small-sized dry-season deciduous tree, growing to 15 m (49 ft) tall. It is a slow-growing tree	Kesudijo Zad	Least Concern	Flowers, Bark	Flowers are dried and crushed, mixed with milk and the paste is used in beauty care and to maintain complexion and suppleness of skin.	The use of its gum as external astringent application is mentioned in 'Charaka samhita'. The leaves are good have astringent, depurate, diuretic and aphrodisiac in pharmacological properties. It stimulates and promotes diuresis and menstrual flow.
14.	*Capparis grandis* L.	Capparaceae, Tree with bark thick, dark brown vertically ploughed. White fragnent flowers	Dumaro	Vulnerable	Whole plant	Whole plant or parts (fruit and stem) are used for curing asthma, rheumatism, diabetes, paralysis, toothache, as antihelmintic, antiallergic, snakebite antidote, etc.	The decoction of fruit and bark is found to be carminative and aphrodisiac, and has been used to treat ulcer, cough, asthma, and stomach aches.
15.	*Catharanthus pusillus* (Murr.) G. Don	Apocynaceae, a rare herb commonly known as tiny periwinkle	Ubhi Singani	Endangered	Flowers, Leaves, Stem	Paste of dried flowers and leaves mixed together has been used for massaging to relieve muscle pain, depression of the central nervous system, also used for applying to wasp stings and to heal wounds. Its syrup made by grinding dried stem and leaves is widely used from the prevention of diabetes to treatment of stomach ache.	*Sushrutha Samhita:* Plant is used in cancer and diabetes; root paste is used in septic wounds; root decoction is used in fever; leaves are used in menorrhagia; leaf juice is used in blood dysentery.
16.	*Cayratia carnosa* (Lam.) Gagnep.	Vitaceae, Climber Occasional on plains on thickets and on wayside of forests	Khatumbadi	Critically Endangered	Whole plant, Leaves, Bark.	Whole plant is used as diuretic, in tumors, neuralgia and splenopathy. Its climbers wrapped around the neck of frantic bullock and poultice of leaves are used to yoke sores of bullock. The bark extract shows the antiviral, antibacterial, antiprotozoal, hypoglycemic, anticancer and diuretic activity.	This is used in Ayurveda, Folk medicine for the treatment of ulcer, antiseptic, antidiarrhoeal, refrigerant and cough.
17.	*Cenchrus ciliaris* L.	Poaceae, a grass planted as a fodder and for erosion control in most warm arid region	Dhaman Gha,	Least Concern	Whole plant	The globular balls are made out of the paste of the plant is used in the treatment of ailments including 'body pain', menstrual disorders and urinary infections. It is given thrice a day with	In ayurveda it is reported to be lactagogue. Related species are recorded as being anodyne, diuretic, and emollient, and are folk remedies for kidney pain, tumors, sores and

						lukewarm water.	wounds.
18.	*Cleome viscosa* L.	Cleomaceae, an annual herb that grows up to a meter high	Beddhro	Endangered	Young twigs and Shoots	Shoot extract is antihaemorrhagic, Decoction of roots diuretic in dropsy, secondary syphilis; root infusion in piles, crushed roots in chronic gleets; plant juice astringent, useful in cuts and wounds, diuretic, used in dropsy and anasarca, Useful in diarrhoea, dysentery, nervous diseases and eye troubles.	Ayurveda medicine system documented this plant for rheumatic arthritis, hypertension, malaria, neurasthenia, and wound healing. No exact evidence for this formulation found.
19.	*Clerodendrum phlomidis* L.	Lamiaceae, It is a small shrub, 2-4 meter tall bearing opposite leaves and having woody rootstock	Tankaro, Arani	Least Concern	Flower, Leaves, Roots	The decoction of minced roots and leaves improves appetite and aids in proper digestion. It is also useful in diabetes and urinary tract infection.	*Charaka samhita:* It pacifies kapha (kaphaghna). Used to reduce swelling and inflammation (Shothahara). Warm leaves are used to relieve severe pain. It is useful for low digestive fire and improves digestive fire.
20.	*Cocculus hirsutus* (L.) Diels	Menispermaceae, Climber reaching several metre in length; young branchlets, densely pubescent, tomentose. Leaves yellowish-tomentose	Vagval, Asipal	Least Concern	Roots, Stem	The fresh sap of the stem and the roots are sun-dried, grinded and mixed with camel's milk. The solution is given once a day to treat intestinal worm infestations, Sun stroke, migraine, anorexia etc. It also possesses antimicrobial potential.	In ayurveda this plant is used for the treatment of fever, skin diseases, stomach disorders, urinary diseases and also as a sedative among many other uses.
21.	*Cocculus pendulus*(Forst.) Diels	Menispermaceae, A woody liane with stem up to 15 cm. in diameter at ground-level; young branchlets slender, puberulous	Karipat, Karipad	Endangered	Leaves	The tablets made of leaves paste is given twice a day to the patient having an issue of motion sickness, including car-sickness and sea-sickness, dizziness and headache.	Ayurveda validates this formulation and also documents that the leaves are used to treat several diseases like polyuria, fevers, piles and is said to possess aphrodisiac property.
22.	*Commelina diffusa* Burm. f.	Commelinaceae, Perennial herb with a scrambling growth habit, reaching to a length of 1 m.	Nanu Shishmuliyu	Least Concern	Flower, Leaves	Leaves are boiled and grind with air-dried flowers and the mixture is given twice a day with milk to the individual to heal swelling, treatment of	The plant has been reported to be used for the treatment of various ailments like leprosy, sore throat, opthalmia, burns, pain and infammation and also

						urinary tract infection and respiratory tract infections, diarrhea, enteritis, and hemorrhoids.	used as depressant, demulcent, emollient and laxative. The plant has also been used in fever, malaria, insect, bug bites, rheumatoid arthritis, gonorrhea, influenza, and bladder infection
23.	*Commelina forskalaei* Vahl	Commelinaceae, A herb with a very prostrate habit, leaves simple, alternate, coriaceous and thick, strongly wavy at the edges and dark green	Motu Shishmuliyu	Least Concern	Whole plant	The plant extract is massaged locally/ taken orally with lukewarm water twice a day for 15 days to cure rheumatism and body swelling.	*Sushrutha samhita:* it is used as bitter, laxative, anti-infammatory, demulcent, emollient and depressant. It is used as diuretic and febrifuge. The paste of the plant is used to treat burns and juice of roots is used to treat indigestion.
24.	*Commicarpus verticillatus* (Poir.) Stand.	Nyctaginaceae, A perennial herb	Dhokariyar	Vulnerable	Leaves, Roots	The paste of leaves with camel's urine is used as an ointment in case of snake and scorpion bite.	Though ayurveda validates the cause of usage but there's no mention of camel's urine for the same. The other uses includes rat bite, cardiac ailemnts, urinary infections.
25.	*Commiphora wightii* (Arn.) Bhandari	Burseraceae, It is slow growing, much branched, and shrubby plant. It is 2 to 3 m high with silvery and paper like grayish or grayish-brown bark peeling off in small pieces	Guggal	Critically Endangered	Gum, Flower	Guggul gum resin is used for arthritis, lowering high cholesterol, "hardening of the arteries" (atherosclerosis), acne and other skin diseases, and weight loss. The decoction is given orally in case of arthritis, high cholesterol etc. or applied as an ointment in case of skin diseases, acnes.	Ayurvedic texts dating back to 600 BC recommend it for treating atherosclerosis.
26.	*Cordia perrottetii* Wt.	Boraginaceae, A shrub that grows to 7–10 m (23–33 ft) at maturity, but may be as tall as 15 m (49 ft)	Adbau Gundi	Vulnerable	Leaves	The decoction of the leaves is used for the treatment of cough, asthma, skin diseases, fever, and diarrhea.	Ayurveda system of medicine gives the exact use of the plant.
27.	*Crateva nurvala* Buch-Ham *var. nurvala*	Capparidaceae, an indigenous herb, extensively used in traditional medicines	Tarapan	Least Concern	Bark and Leaves	The bark of the plant is grinded and the powder is mixed with the 1 teaspoon of curd and given twice a day to cure kidney stones, urinary tract	In ayurveda the plant has been reported to be used in the treatment of various urinary problems including stones in kidney, ureters and bladder.

						infections and prostate related disorders.	Brief investigations on Varuna suggest it for its urinary, antiseptic and litholytic (stone breaking) actions.
28.	*Cucumis callosus* (Rottl.) Cogn.	Cucurbitaceae, A climber which is a weed of cultivated fields	Kotimbda vel	Least Concern	Fruits	Fruits are edible and have cooling effect on stomach. Also, Fruit are dried and grinded, boiled with cow's milk and applied to the head has been efficacious to prevent insanity, strengthen the memory and remove vertigo.	Ayurveda has shown the signify ance of this plant in medicinal properties such as analgesic, anti-inflammatory, anti-oxidant, free radical scavenging.
29.	*Cucumis prophetarum* L.	Cucurbitaceae, is a dioecious and prostrate or climbing perennial vine (climber)	Indriyal	Least Concern	Fruit and Seeds	Fruits are edible. Fruit juice is given once a day during micturition. The dried seeds are powdered and two teaspoon is given with water as immunity booster and also has been effective for common flu, fever, headache and cough.	There is an evidence of this plant in ayurveda for the mentioned uses.
30.	*Cyperus difformis* L.	Cyperaceae, Erect annual tufted plant (herb) of 50 cm high, roots fibrous, stem triquetrous, solid, and glabrous.	Chiyo	Least Concern	Tuber and Leaves	The decoction made out of the mixture of tubers and leaves have long been used and play a promising role for treatment of inflammation, pain, fever, wounds, boils and blisters, stomach and bowel disorders, cure spasms, diarrhoea, dysmenorrhea and menstrual irregularities. One tablespoon with lukewarm water twice a day is given.	Ayurveda validates this medicinal herb traditionally used to treat various clinical conditions at home such as diarrhea, diabetes, pyresis, and inflammation, malaria, and stomach and bowel disorders.
31.	*Dalechampia scandens* L. *var cordofana*	Euphorbiaceae, A trifoliate climber, Bracts are leaf-like, up to 4 cm long, more or less shallowly 3-lobed, heart-shaped at the base; margin sawtoothed.	Char Val	Least Concern	Leaves and Roots	The crushed fresh leaves and roots are vesicant and are applied thrice a day to stubborn ulcers, wounds etc.	There is an evidence of this plant in ayurveda for the mentioned uses.
32.	*Dipteracanthus patulus* (Jacq.) Nees	Acanthaceae, Pubescent herbs. Leaves, broadly	Kali Ghavani	Critically Endangered	Roots, Leaves and Stem	Extracts of root, leaves, and stem of this plant are widely	While validating the given herbal formulation, the plant

		ovate, apex acute, base truncate, pubescent; petiole				used in the treatment of Snake bite, wounds, scabies, anti-inflammatory, and ulcers. The paste made out of the extract is applied twice a day on the affected part of the body and shows the ramification in two days of its application.	also have been actively used in the treatment of gonorrhea, syphilis, eye sore, renal infection, cough, wounds, scalds, toothache, stomach-ache and kidney stones.
33.	*Echinochloa colonum* (L.) Link	Poaceae, an annual (rarely perennial) grass, 30-100 cm high. It is green to purple, tufted and shortly stoloniferous.	Sanvadha Sau,	Least Concern	Seeds	Seeds are nutrient dense and support for heart health, immune system, healthy digestion, Lose weight, Good for diabetic patients.	*Sushrutha Samhita:* The tuber of the plant is said to possess antiemetic values and act as a sedative in dyspeptic disorders particularly in vomiting during pregnancy.
34.	*Ehretia laevis* Roxb.	Boraginaceae, A moderate-sized, deciduous tree with smooth, grey bark. Leaves 7-14 cm long, elliptic, obtuse or acuminate, entire, membraneous when young, hard when mature.	Kajiyari Jo Zad	Data Deficient	Bark	The paste made by grinding the bark with pestle and mortar is applied to the affected area in case of ulcers and headache.	In ayurveda this plant has been documented to treat respiratory system diseases (e.g., asthma and cough), gastrointestinal tract infections (e.g., jaundice, diarrhea, ulcers, dysentery, liver diseases), endocrine system diseases (e.g., diabetes mellitus), microbial infections (e.g., diphtheria, scabies, ringworm, gonorrhea, syphilis and venereal diseases).
35.	*Euphorbia caducifolia* Hains.	Euphorbiaceae, subtropical succulent shrub species of flowering plant.	Thor	Least Concern	Leaves	A handful of leaves are sun-dried, crushed and a decoction made out of it is given twice a day (1 tablespoon) in case of breathing disorders including asthma, bronchitis, and chest congestion.	*Charaka Samhita:* It is also used for mucus in the nose and throat, throat spasms, hay fever, tumors, and to combat vomiting.
36.	*Ficus benghalensis* L. var. *benghalensis*	Moraceae, a large, fast growing, evergreen tree that has been widely introduced across tropical and subtropical areas of the world.	Vad Jo Zad	Least Concern	Bark and Leaves	The powdered bark is given with water twice a day to diabetic patients. The milky juice extract from leaves is used to treat ulcer protective, leprosy and fever, inflammations.	In ayurveda this plant is used in the treatment for wounds, skin diseases, eye diseases, leucorrhea, diabetes and diarrhea.
37.	*Grewia tenax* (Forsk.) Fiori	Malvaceae, Sub erect to erect shrub. Flowers	Gangati	Least Concern	Leaves and Roots	The mixture of both leaves and roots are properly grinded with	*Grewia tenax* is explained by Charaka and Sushruta. It has

		white (rarely yellowish white), solitary (rarely paired) on 1-2 cm long peduncles, 2-2.5 cm across; petals bilobed at the apex.				water and is useful in bone setting and fractures.	blocking action, useful in bleeding disorders such as menorrhagia, ulcerative colitis etc.
38.	*Grewia tiliaefolia* Vahl var. *tiliaefolia*	Malvaceae, A tree reaching 8 m (26 ft), it is found in monsoon and intermediate forest.	Dhman Jo Zad	Endangered	Stem and Bark	The extract of bark and stem is used for the treatment of wounds, urinary infection and skin diseases.	*Sushrutha Samhita:* Bark-antidysenteric Stem bark—semen coagulant Plant— used in fractures. Antirheumatic, anti-inflammatory, mild laxative, diuretic, diaphoretic, fungistatic
39.	*Grewia villosa* Willd.	Malvaceae, A coarse-leaved shrub	Luskejo Zad	Least Concern	Bark and Roots	The bark is crushed and infused to help treat boils, abscesses, and swelling. The root also has been used for abdominal pain.	In ayurveda the plant is taken internally it is often used as a remedy for diarrhoea and dysentery, for example, whilst externally it is applied to wounds, cuts, ulcers, irritations etc.
40.	*Hibiscus ovalifolius* (Forsk.) Vahl	Malvaceae, Shrub produces white and pink flowers.	San Bhindo	Critically Endangered	Leaves	The leaves are used in the treatment of dysentery and bilious, blood and throat disorders.	Other than the given formulation this plant also has been reported to be efficacious to treat jaundice, heart related diseases and liver disorders.
41.	*Indigofera tinctoria* L.	Fabaceae, Suffrutescent herbs, to 1.5 m tall; stem erect, appresed-pubescent. Leaves pinnately 5-13-foliolate; leaflets opposite.	Nili Gari, Gudi,	Least Concern	Whole Plant	The decoction is given thrice a day (1 tablespoon) in the treatment of fever, liver disorders, rheumatoid arthritis. Leaves paste is also effective in dying the grey hair.	Ayuevda documents the various parts of the plant are useful for promoting growth of hair, chronic bronchitis, asthma, ulcers, and skin diseases, in gastropathy and in epilepsy.
42.	*Ipomoea coptica* (L.) Roth.	Convolvulaceae, The plant is a vine (climber) that creeps on the floor or twines on neighboring plants. The plant is highly branched from the base. The principal axis are 50 to 90 cm	Fotiyar	Least Concern	Whole Plant	Cold infusion (plant soaked in water for 8-12 hours) given in dizziness and intoxication. Herb also used in chest complaints in children.	The formulation is synchronized with the documentation in ayurveda. Also the plant boiled in oil has found to be efficacious in the treatment of Rheumatism, epilepsy, leprosy and ulcers.

43.	*Maytenus emarginata* (Willd.) D. Hou	Celesrtaceae, an evergreen tree.	Vikalo, Vigo	Vulnerable	Leaves	The leaves of the plant are found to be analgesic and anti-inflammatory and have been actively used for the treatment of inflammatory diseases such as rheumatoid arthritis, gastritis, ulcers and gastrointestinal disorders.	The plant is also very popular and well known for its vermifuge, toothache, cooling effects; purify blood, fever, asthma, rheumatism, and gastrointestinal disorders.
44.	*Melanocenchrus jacquemontii* J. and S.	Grasses, a natural homogenous group of plants belongs to one of the largest family i.e. Poaceae.	Vekar	Vulnerable	Leaves	The leaves are grinded with warm water and the pate is applied twice a day in cuts and wounds. The effect is seen within three days of the application.	Though the exact formulation is not available in the ayurveda literature but the plant has reported to be used in wounds healing.
45.	*Melhania futteyporensis* Munro ex Mast.	Malvaceae, Perennial herbs or shrubs, herbaceous parts usually densely.	Adbau Khapat	Critically Endangered	Leaves	The leaves are soaked in warm water for 4 hours and are wrapped with coconut oil in the affected area with muslin cloth for 3 hours day in case of inflammation and wounds.	The herbal formulation is validated by the ayurvedic system of medicine.
46.	*Momordica dioica* Roxb.	Cucurbitaceae, is a perennial, dioecious, cucurbitaceous climbing creeper (commonly known as kakrol, spiny gourd or teasle gourd).	Kantoliyal	Endangered	Fruits, Leaves and Tuberous Roots	The aqueous extract of the fruits, leaves and roots possess very good anti-diabetic activity and is having high margin of safety.	The other uses of the plant includes: Toasted root or its powder is used to treat bleeding piles. In headache, its tubers are used with honey. Root juice relieves inflammation.
47.	*Moringa concanensis* Nimmo.	Moringaceae, A tree with Petals 5, white, with purple streaks, oblong-obovate, 1.5 x 0.5 cm, and unequal. Fertile stamens 5; filaments 4-6 mm, pubescent; anthers 2 mm; staminodes declinate.	Sargave Jo Zad	Endangered	Leaves	The leaf paste is used for treatment of skin tumor, tiredness, to reduce blood pressure, aphrodisiac, jaundice, eye care, diabetes and bloat.	As per ayurvedic documentation the other uses of this plant includes: anticancerous, antibacterial, antifungal, analgesic, and anti-inflammatory type of activities.
48.	*Mukia maderespatensis* (L.) M. Roem.	Cucurbitaceae, Climber or trailer to 2.5 m. from perennial woody rootstock; stems roughly bristly-hairy.	Ankhfutmani	Vulnerable	Leaves and Roots	The syrup of the leaves and roots are used in stomach ache, anti-ulcer, anti-inflammatory, antipyretic, and diuretic.	Ayurveda has documented this plant for its antibacterial and antifungal properties.

		Leaf-blade sagittate, hastate, triangular, ovate or broadly ovate.					
49.	*Pentatropis spiralis* (Forsk.) Decne	Asclepiadaceae, A flowering and fruiting climber.	Dhodheji Val,	Endangered	Leaves	Leaf paste is used for external application in inflammation and skin issues.	*Charaka Samhita:* The plant has been effective as analgesic and anti-inflammation uses.
50.	*Peristrophe bicalyculata* (Retz.) Nees	Acanthaceae, A perennial herb, stems several-angled, erect to 1.50 m high	Lasi Adhedi	Critically Endangered	Leaves and Stem	The leaf and stem extract is used for external application in snake and scorpion bite and the decoction is given once a day (2 teaspoons empty stomach) to cure cough and cold.	*Charaka Samhita:* The herb is used for its anti-bacterial property (tuberculostatic), snake poison, in bone fracture, sprain, fever, cold, and cough and for ear and eye treatments.
51.	*Phoenix sylvestris* (L.) Roxb.	Arecaeae, A graceful palm tree, 10-16 m tall with a large crown and rough trunk covered with persistent leaf bases. Leaves 3-4.5 m long, greyish-green.	Khajuri Jo Zad	Endangered	Fruit	The fruits are crushed and they juice is mixed with lemon, water, curd and tamarind extract to prepare a tonic which is given 2 tablespoon twice a day in the treatment of backache, vomiting, vertigo and unconsciousness.	The ayurveda doesn't validate the exact formulation but the plant has been documented for this usage. It is also been efficacious in the treatment of constipation, fever, skin infection, wounds.
52.	*Pithecellobium dulce* (Roxb.) Bth.	Leguminosae, A spreading tree which may grow as high as 15 meters, with bark peeling in large thin flakes.	Goras Amali	Least Concern	Bark, Leaves, Seeds	Bark extracts are used for chronic diarrhea, dysentery, constipation and tuberculosis. Extract of leaves is employed as a remedy for indigestion and to prevent spontaneous abortion and for gall bladder ailments and to treat both open and closed wounds. Ground seed is used for treating ulcers.	The plant has also been documented for the treatment of gum ailments, toothache, and hemorrhage in the ayurvedic system of medicine.
53.	*Premna resinosa* Schau.	Lamiaceae, Shrub, up to 2-3 m tall; young branches whitish, somewhat pubescent to glabrous.	Nidhi Kundher	Least Concern	Leaves	The tonic prepared from the leaf extract is given once a day to the patient showing the symptoms of bronchitis, respiratory illness and convulsions of the rib cage.	This plant is also used in the treatment of musculoskeletal pain.
54.	*Prosopis cineraria* (L.) Druce	Fabaceae, a deep-rooted, perennial and multipurpose tree that provides useful fodder for livestock in the drier areas of India.	Kandhi, Kando	Data Deficient	Bark and Leaves	The bark extract and leaf paste is used to cure many diseases such as ailments like leprosy, dysentery, asthma, leucoderma, dyspepsia and earache.	*Sushrutha Samhita:* It is also used for the treatment of vertigo and as a brain tonic. A paste of bark is applied to scorpion sting.

55.	*Prosopis juliflora* Sw. (DC.)	Fabaceae, Shrub with bark brown, fissured. Spines straight, paired. Compound leaf, leaflets 8-20 pairs, 10 m high, bark deeply wavily.	Gando Baval	Least Concern	Stem and Bark	To overcome oral and periodontal infections, aqueous stem and bark extracts of *P. juliflora* has been used to eradicate bacterial infections from the periodontal space and oral cavity.	While *Charaka Samhita* has validated the efficacy of the given formulation, it has also been reported that the plant contains anti bacterial, antifungal, anticancer, antioxidant, antimicrobial activity.
56.	*Pupalia lappacea* (L.) Juss.	Amaranthaceae, Perennial herb up to 1 m tall, much branched, swollen at nodes; densely tomentose; leaves opposite, ovate-elliptic to oblong or even orbicular, tomentose	Gadar Bhurat	Least Concern	Leaves	The leaf decoction is highly recommended in the treatment of wounds, bone fractures, boils, cough, toothache, fever and malaria.	In ayurvedic medicine the other uses of this plant includes: diarrhea, urethra pain, leucorrhoea and many other disorders.
57.	*Rhynchosia minima* (L.) *var. minima*	Leguminosae, a perennial herbaceous plant with slender stem, creeping or climbing.	Mogariyal	Least Concern	Root	The finely grinded paste of root is applied twice a day in the affected region in case of skin allergies, itching and swelling.	Ayurveda system of medicines validates the formulation and the usage of this plant for the given diseases.
58.	*Rivea hypocrateriformis* Choisy	Convolvulaceae, Climbing shrub, Twining subshrubs, stem white silky-pubescent. Leaves 3-4 x 3-6 cm, cordiform, apex obtuse, base cordate, subcoriaceous; petiole to 6 cm.	Fang val	Endangered	Leaves and Young Shoots	Leaves and young shoots are eaten as a vegetable and roots are given after parturition. Cooked leaves of this plant are utilized as vegetable curry.	Ayurvedic also documents the use this plant to prevent fertility in women.
59.	*Salvadora oleoides* Decne.	Salvadoraceae, a multipurpose tree species which grows in the arid zones of India. The species is of immense commercial value like in food industry and herbal industry etc.	Mithi Zar	Data Deficient	Leaves	The leaves are soaked in boiling water for an hour and the slurry made out of it is mixed with milk and is given once a day in the treatment of various ailments like piles, tumors, bronchitis, cough, rheumatism, fever, conjunctivitis.	*Charaka Samhita:* The root contains steam-distillable oil, which is responsible for decreasing dental caries.
60.	*Sarcostemma acidum* (Roxb.) Voigt	Asclepiadaceae, Shrub: Flowers are white on	Sandhiyaval	Least Concern	Roots	The root paste acts as antidote for snake-bite and rabid dog	This plant is also used in treatment of respiratory

		sessile umbels at the end of branches. Pedicels are 6.0-8.0 mm long, slender and pubescent.				bites.	ailments like common cold, mental diseases, sinusitis and rhinitis.
61.	*Sclerocarpus africanus* Jacq.	Asteraceae, Annual or perennial herbs; Morphology Leaves: Leaves alternate or sometimes opposite near the base of the plant, simple; Leaves: Leaves alternate.	Kochar, Bid	Least Concern	Leaves	Thick slurry of the leaves soaked in water is mixed with refined sugar and tamarind and given 1 tablespoon twice a day to cure inflammation, skin diseases, common cough and cold.	The plant is also anti-carcinogenic as documented in ayurveda.
62.	*Securinega virosa* (Roxb.) Pax and Hoffm	Euphorbiaceae, Shrub	Shini	Least Concern	Leaves	The aqueous extract of the leaves is used to treat dysentery, diarrhea, and cholera, stomach problems (gastritis, ulcers, and pain). The patient is given the extract (1 tablespoon) twice a day.	Ayurveda validates the given formulation and also documented this plant to treat uterine diseases, menstrual problems, infertility, venereal diseases, hernia, and intestinal complications.
63.	*Solanum albicaule* Kotschy ex Dunal	Solanaceae, Shrub	Bhoy Ringni	Least Concern	Leaves	The leaves are soaked in warm water and dried in sunlight for three days. It is then grinded in pestle mortar mixing it with mustard oil and camphor. The paste is applied externally to cure warts and tumors.	Though the exact given formulation is not available in ayurveda but it validates the utilization of the plant for the given disease.
64.	*Solanum incanum* L.	Solanaceae, is a herb or soft wooded shrub up to 1.8 m in height with spines on the stem, /stalks and calyces and with velvet hairs on the leaves. Flowers pale to deep blue, mauve or purple.	Ubhi Ringni	Least Concern	Roots	The roots are grinded into a powder, mixed with honey and been given 1 teaspoon twice a day with honey and lukewarm water in issues of sore throat, stomach-ache, head-ache, painful menstruation, liver pain, malaria, fever and common cold.	The plant has also been used to treat hypertension, stomach problem, asthma, diabetes, common cold and pain pneumonia and rheumatism.
65.	*Tamarindus indica* L.	Fabaceae, the tree is a long-lived, large evergreen, and generally grows wild. A mature tree may attain a	Ambali Jo Zad	Least Concern	Fruit	The decoction made out of the fruits and honey is given thrice a day to treat wound healing, abdominal pain, diarrhea, dysentery, parasitic infestation,	*Charaka Samhita:* The plant is also well documented for its utilization in treating pain, joint inflammation, sore throat, constipation, and jaundice,

		maximum height of 30 m.				fever, malaria and respiratory problems.	wounds, as an acid refrigerant.
66.	*Tephrosia purpurea* (L.) Pers.	Fabaceae, Perennial erect or decumbent herbs or subshrubs, up to 50 cm tall.	Vado Sarpankho	Least Concern	Roots and Leaves	The powdered mixture of dried roots and leaves is further mixed with black pepper, camel's milk. The formulation is given twice a day to cure live diseases and has been found to be efficacious.	According to Ayurveda, the plant is anthelmintic, alexiteric, restorative, and antipyretic. It is used in the treatment of leprosy, ulcers, asthma, and tumors, as well as diseases of the liver, spleen, heart, and blood.
67.	*Tephrosia uniflora* Pers. *petrosa*	Fabaceae, a semi-erect perennial herb, up to 1 m tall, stem velvet-hairy, hairs silky. Flowers are pink, pea-flower shaped.	Sarpankhi	Least Concern	Leaves	The aqueous extract from fresh leaves is given once a day (early morning, empty stomach) to cure indigestion and various stomach problems.	According to Ayurveda, plant is digestible, anthelmintic, alexiteric, antipyretic, alternative, cures diseases of liver, spleen.
68.	*Tinospora cordifolia* Roxb.	Menispermaceae, a herbaceous woody liane, annual or perennial Ayurvedic plant.	Gaduji Val	Least Concern	Roots	The juice extract from the dried roots is highly significant as immunity booster and to cure fever, jaundice, chronic diarrhea, dysentery.	The plant has an importance in traditional ayurvedic medicine used for ages in the treatment of bone fracture, pain, asthma, skin disease, poisonous insect, snake bite, eye disorders.
69.	*Tribulus terrestris* L.	Zygophyllaceae, an annual herbal plant.	Akanthi	Least Concern	Roots and Fruits	The fruit juice and powdered roots are mixed together with asafetida, honey, carom seeds, fennel, coriander powder and water. The slurry is efficacious to treat kidney and gall bladder stones.	As per Ayurveda, helps in eliminating and treating kidney or urinary stones. Both roots and fruit of the plant are used in treating stones. But the exact given formulation is not been documented in ayurveda.
70.	*Trichodesma amplexicaule* Roth	Boraginaceae, is an erect, spreading, branched, annual herb, about 50 centimeters.	Undh Fuli	Vulnerable	Leaves and Roots	The paste made out of the roots and leaves are externally applied in case of snake bite and external swelling of the limbs.	While validating the given formulation, the ayurveda system of medicine has also reported the plant to be used in the treatment of Irritable Bowel Syndrome, rheumatoid arthritis, dysmenorrhea, snake poisoning and localized swelling.
71.	*Vachellia leucophloea* (Roxb.) Willd.	Fabaceae, A moderate-sized tree, upto 12m.	Hirmo, Haramu	Least Concern	Bark	Bark extract is used for external application in case of snake bite, applied on forehead during high fever, and it is applied in	The plant is also used as an astringent, a bitter, a thermogenic, a styptic, a preventive of infections, an

						nostril during running and bleeding nose.	anthelmintic, a vulnerary, a demulcent, an expectorant, an antipyretic, an antidote for snake bites and in the treatment of bronchitis, cough.
72.	*Vachellia nilotica* (L.) Del. ver. *Indica*	Fabaceae, A large spreading multi-stemmed shrub or small upright (i.e. erect) single-stemmed.	Deshi Baval	Least Concern	Bark	The bark extract is used to treat nausea, burns and wounds, stomachache and diarrhea.	As per ayurveda evidence, this plant has anti-microbial, anti-plasmodial and antioxidant activity and used for treatment of human immunodeficiency virus, hepatitis C virus and cancer. It is useful for treatment of venereal diseases.
73.	*Vachellia senegal*(L.) Willd.	Fabaceae, A low branching shrub or small tree to 7 m high (maximum 15 m). The tree flowers during the rainy season and loses its leaves during the dry season.	Kher, Gorad	Least Concern	Bark and Roots	The gum extracted from the bark of the tree is dissolved in water and the solution is used in stomach ache, cholesterol problems, and skin diseases.	Other than the documented usage the plant has also been actively used in medication for throat and stomach inflammation and as a film-forming agent in peel-off skin masks as per ayurveda system of medicine.
74.	*Vernonia cinerascens* Sch.-Bip.	Asteraceae, Laxly branched sub-shrub, usually less than 1.5 m tall. Stems several, stiffly woody, covered in dense grey, appressed, T-shaped hairs.	Tatadio	Least Concern	Leaves	The leaf decoction is used in fever, sore throat, stomach infection.	In ayurveda the plant has found to be effective in the treatment of fever, localized swelling, renal calculi, wounds, skin diseases and elephantiasis.
75.	*Zizyphus nummularia* (Burm F.) W. and A.	Rhamnaceae, is a shrub up to 6 metres (20 ft) or more high, branching to form a thicket.	Chania Bor	Vulnerable	Leaves and Fruits	The juice extract from leaves and fruits is given twice a day to treat fever, gum inflammation and cough-cold and fever.	*Charaka Samhita:* used for cold, diarrhea, dysentery, indigestion, inflammation of gums and tonic.

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