

**Full Length Research Paper****Ethonobotanical Studies of some Plants included in Folk Medicines of Goa**Lata satyawan Naik¹, Puttaiah.E.T² and Ananth Nag B³¹Department of Environmental Science, Gulbarga University, Gulbarga-585106²Vice-Chancellor, Gulbarga University, Gulbarga-585106³Department of Environmental Science, Kuvempu University, Shankarghatta***Corresponding Author: Ananth Nag B****Abstract**

The paper presents about the documentation of ethno botanical studies of some plants included in Folk medicines of Goa. Goa is recognised as the hot spot of plant biodiversity and also as the land of Ayurveda, with rich source of medicinal and aromatic plants. The tribal population of some parts of Goa still maintained a great traditional knowledge based on herbal medicines. But this valuable information with different people is under the threat of modernization. Overexploitation and the destruction of forest wealth are leading to the depletion of these herbal medicines from their natural habitat and many may be at the brink of extinction. The only way to protect, conserve and use this precious knowledge for the well being of humanity is to create social awareness about the traditional knowledge as well as resources. This paper is an attempt in this direction. There is a need of serious attempt to identify and do research on ethno medicine of Goa. It is the need of the hour of documentation of still unknown aspects, information of ethno medicine of the state. Social awareness about the threat of extinction and over exploitation of these herbal resources will help to preserve, protect and conserve these rare medicinal plants. The attempt to identify and document information on ethnic medicine is the beginning of an important era to protect and utilize our ethnic information.

Key Words:- Ayurveda, *Abelmoschus esculentus*, *Asparagus race mosus*, *Adathoda vasica***Introduction**

Early man lived in harmony with the nature which surrounded him. Being in close contact with nature entailed the use of herbal medicine as healthcare and also for the medicinal treatment of the various diseases. In Goa, most of the tribal people and Socio-economically backward communities are the major source of traditional knowledge about the uses of various plants. The rural areas of Goa are inhabited by different communities, like Kunabi, Velip, Gawde, Chambhar, mhar, kansar etc. Most of which are socio-economically backward. Quite a large number of plants are used for the treatment of various diseases. In this paper study on native methods of treating some diseases like digestive problems, Jaundice, piles, heart related disorders, eye, ear, throat problems, stomach disorders are considered. This information on traditional based methods of treating above said diseases is given in brief in this paper, based on the personal contacts with various people of different ages of different parts of Goa. Many of the herbal treatments I could observe personally from my grandmother Late Gangabai. Tarihalkar of Karle Belgaum of Karnataka state. Lots of similarities I found in the herbal practices of Goa and Karnataka. Information is also collected from local news paper, magazines and also books written in Marathi and Konkani on home remedies, literature is also cited from Goa University library, Central library of Panaji, Govt. Of Goa, and from various websites almost from 1987 onwards till the date. with industrialisation in Goa, modern education system, invasion of western culture, especially Portuguese culture and gradually growing urbanization, the original traditional knowledge base system is eroding. There is a fear among the elderly goans that due to lack of proper documentation and conservation of bio-diversity, the traditional knowledge may vanish within a few more generations. Also like other parts of India, the Plant resources of Goa are declining at an alarming rate. Many ethno botanically important plant species which were abundant till a few years back, are becoming rare. By considering all this, the present topic was undertaken to study the ethno medical plants of Goa.

Traditional Knowledge (IK)

In Goa, tribal communities lived in harmony with environment since time immemorial. Thus they started using plants, herbs available in their surrounding which become the first medical treatment for them. As per the climatic, topological conditions in different areas of Goa, it gave rise to difference in vegetation and which lead the people to use different herbs to treat similar diseases in different areas e.g. in Bardez Taluka of Goa, Jaundice is treated by giving the decoction of tender leaves of *Grewia micrococos* of Tiliaceae family, in vernacular language it is called 'Ansalu' whereas in Tiswadi, Taluka which is just next to Bardez, in this area along with the leaves of *Grewia micrococos*, the seeds and leaves of *lawsonia inermis* Linn, ie. Heena are also added to treat the same ailment. And thus in the different area, there developed health care system centered around the locally

available resources and by the application of indigenous knowledge of those localities of that particular area, which are commonly called traditional healing systems or traditional medicines or indigenous medicine.

In rural areas the elderly person who applies the indigenous beliefs, skills and cultural practices concerned with the health of the people is called "Vaij" (Vaidya – doctor of herbs) Also in some village ladies do have the knowledge of folk medicines, especially those who are experts in doing the deliveries of pregnant ladies. In Gawda community (ST) there are 'Zalmi families', elderly person who is knowledgeable about indigenous medicine also gives the medicines. In fact it is the part of the "knowledge system" which belongs to a community or part of the knowledge system of "Indigenous people" which is often referred to as "traditional knowledge". In some villages it is also found that there are elderly ladies who play the role of imparting Indigenous knowledge and are called as "vaijin" (untrained nurses) In some peculiar type of families only, the vaij imparts his knowledge orally to their next generation.

In this modern era, IK is losing its importance in our state. People were diverted towards the allopathic medicines since the arrival of British rulers, Portuguese in Goa. By using allopathic medicines one gets instant relief from all pains. But this allopathic treatment produces side effects on our body. Which is slowly realized by the people. Now a days still irrespective of their side effects people consume these medicines carelessly. All over the world IK is facing the danger of loss due to following reasons.

- Decline in the original culture of the societies or also due to strong influence of our cultures of different countries, on Goa it is of Portuguese country.
- Dying out of the personalities bearing Ik without any recognition. As these elderly 'Vaij' of communities possessing oral based knowledge, once lost cannot be retrieved.
- Many of the 'Vaij' in almost all rural areas of Goa, believe strongly that "what known by many will lose the power of the herb" which is associated with the curative properties of those medicinal herbs and so they hesitate to share the knowledge with others.
- Over exploitation of these medicinal plants for the sake of selling it to the manufacturers of Ayurvedik products.
- Rapid depletion of Natural resources due to social, political and other reasons in traditional medicine.
- Sometimes the medicinal herbs are not easily available to the people when in need which then leads to non-application of these herbs and ultimately results in loss of information about the curative properties of these herbs.
- Very less percentage of IK of the tribal communities from various parts of Goa has been documented so far.
- So far IK, even though can be used to supplement public Health Centres provisions, to promote economic schemes in rural areas and for planning conservational strategies of bio sources, it is not given importance in our state, in fact IK related to herbs is completely ignored.
- No proper training for maintaining and preserving this IK is given to the people from this field.
- Not much importance is given to the illiterate 'Vaij' of our state, ie. They are almost neglected.
- Eroding social structure of our society and the desire for imitating modernity in our lifestyle are also contributing to the disappearance of the IK.
- Also the IK is becoming rare because of certain deterministic or man-made activities like deforestation, habitat destruction, road construction, fire, economical exploitation etc.
- Natural catastrophes like floods, storms, landslides, heavy rains, climatic changes in Goa are also responsible for disappearance of IK. e.g. seeds of herbs like cassia Tora (Taikhilo) usually germinate during the first week of June or last week of May, but due to climatic changes early rains in the month of March, create the environment for these seeds to germinate, and seedling than face the hot – sun rays in the month of March-April, due to which the seedlings die before they mature and produce flowers and seeds, this causes decline in the percentage of cassia tora species. Same way other delicate herbs also die before they grow mature.

Protection, Conservation And Utilization of Medicinal Plants at Goa

One of the statements made by Hippocrates was "Nature cures, not the physician." And to prove this, we should follow the natural methods to cure the ailments. Medicinal plants and herbs are some of the strong sources through which we can improve our health and cure various diseases. But do to this there is a need of protecting and conserving the wealth of medicinal plants. Actually, protection, utilization and conservation of these plants coexist. Both methods of insitu and exsitu conservation can prove beneficial in Goa to conserve our medicinal heritage. The insitu conservation of the plants within the protected areas, sanctuaries, parks, field gene banks, nurseries etc. Provide good protection. The National parks or sanctuaries of Goa are alone not sufficient to conserve valuable plant species, but the protection and conservation should be given highly valuable importance by the state and steps should be taken accordingly as soon as possible. Endangered rare species should be conserved in small metric with great care.

The ex-situ conservation through the establishment of ethno botanic garden, kitchen garden, drug farms and other hill farming system which are traditionally practised by the farmers of Goa, should be improved by using modern technology and the conservation should be done which will be acceptable and suitable to the local conditions ranging from traditional agro-

ecosystems to modern agro forestry technology need to be introduced, as the climatic condition, topography of two areas within Goa state is not exactly same. So keeping these changes into consideration, conservation strategy of the medicinal plants should be applied to our state. In fact, cultivation is the best alternative for conservation of wild species. Deforestation, unnecessary killing of old and huge tree should be completely banned, which is one of the simple way to conserve "Tree-Treasure". Planting of medicinal plants by the people should be taken as a task, at an individual level.

Methodology

The people of different ages, and different regions and castes, have been interviewed for the collection of information of folk medicines. Extensive field trips were fixed for collecting the data using an integrated approach of botanical collection including interviews and questionnaires to identify and gather the information about trees and herbs.

The study was carried out in the various villages all over Goa. The villages which were selected were Parcem, Pomburfa, carambolim, Rachol, Marcela, Betki, Poinginim, Ponsule, Selaulim, Fatorpa etc.

The survey was conducted to collect information regarding tribal areas of these villages. Information from local traditional herbal healers (Vaijya) was collected through periodical visits.

The information on home – remedies using the preventive and curative values of different plant species was documented based on observation method and interview method. The author personally went to these villages and observed certain methods and ways of treating the illnesses. Guidelines suggested by Nan Lin were followed so use of audio visual equipments was done so as to avoid mistakes which may take place due to the depending on the memory of the author. For common cold, cough, and fever which are the illnesses observed due to the climatic changes, soon after the summer season especially, many home remedies were used. The observation was uncontrolled and not planned, it was sudden observation, but this could give the author true and on the spot information. The information was designed systematically, was the result systematic enquiry from the independent variables, Here the variables are tribal people and traditional herbal healers of Marcela and Betki area.

Secondly method of un-structured interview was applied as the structured interview does not give personal touch to the responses, and so instructed interview with the same above said people was taken. Here the questions were asked the interviewers which were not in sequence and method of asking question was not fixed. This interview has helped the author to solve the purpose of getting indigenous information of medicinal plants.

Also used accidental sampling method in which by "hit and miss" fashion the interview was conducted by the sampler whenever happens to meet them. The author contacted people who were close persons or whom the author knows. The rough questionnaire was developed which changed as per the situation of the sampler met the variables. This has helped to develop documented information prevailing in the community over a period of time in periodical visits. Also these variables were requested to gather related information in mean time and it was documented in a systematic manner.

Identification of plants has been made through the local name of plants with the help of existing literature. An illustrated dictionary of Indian Medicinal plants by C. P. Khare, catalogue of "The Medicinal plants of Goa" by Prof. R. V. Gaitonde, were consulted to confirm the identification and medicinal uses of plants.

Goa is a very small coastal state, which is situated roughly in the middle of the western sea face of the peninsular India. It forms a part of southern konkan area which is again surrounded by Arabian sea. Goa is located between 14°53'54"-15°48'00"N and 73°40'33"-74°20'13" E with an area of about 37018q.km.

The Flora of Goa consists of three main categories e.g. tropical monsoonal forests of the Sahyadrian Ghats and their extensions along the projecting hill ranges, towards the coastlands, the poor cover of grass and scrub, on its lateritic plateaus and the fringing belts of vegetation along the estuaries and shoreline (Prof. R.V. Gaitonde, 2004) The Goa state has versatile vegetation which can be broadly classified as coastal Vegetation, Plateau vegetation and semi-evergreen and evergreen forests. Besides this the study area has many hydrophytes and grass lands which occurs at all elevation.

The major portion of Goa belongs to the plateau vegetation type with the scrub jungles extending from 50-200m and deciduous forests confined to 200-500m altitude. Panaji to cortolim, panaji to colvale, cortolim to Margao, and from Bicholim to Sanquelim are the areas which have open scrub jungle which are also affected due to unending mining of manganese ore. Also Valpai, Anmode Ghat attached to Karnataka state comes under moist deciduous forest type. Which can be also observed in Ponda, Cancona, Quepem, Sanguens and Sattari taluka of Goa. This type of the forest is distributed in about 385sq. kms of the study area.

Along the north-eastern and south-eastern portions bordering Karnataka state, evergreen and semi-evergreen forests are observed. Coasts of Goa are also abundant of some sea weeds and other plants which are used by herbal healers as folk medicines.

Table 1: Some of the plants with local name, parts used in medicine by the traditional herbal healers of North district

Sr. No.	Botanical name	Plant Name English Name	Local Name	Family	Habit	Disease	Plant parts used & formulation
1	<i>Aahatoda varcca</i>	Malabar nut, vasaca	Adulso	Acanthaceae	Medium size shrub	Cold, cough fever	Leaves (extract)
2	<i>Abutilon indium, linn</i>	Country Mallow, Chinese bell-flowers	Pettari	Malvaceae	Woody perennial shrub	Urinary, kidney infections	Leaves, Roots, (decoction)
3	<i>Actinodaphne hookeri</i>	?	Disa	Lauraceae	Big tree	Diabetes	Leaves (decoction)
4	<i>Adina cordifolia</i>	Yellow teak, saffron teak	Edu	Rubiaceae	Deciduous tree	Astringent	Root (powder)
5	<i>Aegle marmelos</i>	Bengal Quince	Bel	Rutaceae	Medium size tree	Diarrhoea as tonic	Root (powder)
6	<i>Albizzia lebbec</i>	Siris tree, east Indian wainut	Shiras	Mimosaceae	Large tree	Piles, bronchitis	Seed in piles, Bark in bronchitis
7	<i>Albizzia procera</i>	?	Kinnai shveta shiris	Mimosaceae	Large tree	Rheumatism, haemorrhage	Bark (decoction)
8	<i>Allophylus cobbe, Blume</i>	Soapnut	Ritho	Sapindaceae	Shrub	Gas trouble, antidote for scorpion and insect stings	Roots (extract)
9	<i>Anacardium occidentale</i>	Cashew nut	Kaju	Anacardiaceae	Medium size tree	Stomach ache	fruit (extract)
10	<i>Andrographis paniculata Nees</i>	Creat	Kiraitem	Acanthaceae	Annual herb	Stomach-ache, worms	Whole herb
11	<i>Artocarpus hirsute</i>	?	Ranpanas	Moraceae	Tall tree	Wounds and cuts	Leaves (extract)
12	<i>Artocarpus lakoocha Roxb</i>	Mankey Jack	Otamb	Moraceae	Large tree	Crated skin	Bark (paste)
13	<i>Arundinella gigantean, Dalz</i>	?	Jivnal	Graminneeae	A tall grass	Bowel complaint in children	Tender leaves (extract)
14	<i>Asparagus racemosus, Wild</i>	Indian asparagus	Sosro	Liliaceae / Asparagaceae	Scandent, Woody shrub	Rheumatism, blood diseases, urinary troubles	Roots (powder)
15	<i>Atylosia scarabaeoides, Benth</i>	?	Ghosvel / jangli Tur	Leguminosae / papilionaceae / Fabaceae	Herbaceous twiner	To remove worms from children	Whole herb (extract)
16	<i>Averrhoa bilimbi, linn</i>	Biilimbi tree / sorrel	Bimblam	Oxalidaceae / Avernoaceae	Small tree	Astringent	Fruit (pulp)
17	<i>Bambusa vulgaris</i>	Spiny or Thorny Bamboo	Maan	Germineae, poaceae	Tall Bamboos	Blood purifier	Stem (decoction)
18	<i>Boerhaavia diffusa linn</i>	Horse-purslane, Hogweed	Punarnava	Nyctaginaceae	A diffuse prostrate herb	Gonorrhoea, urinary problems	Leaves, roots
19	<i>Bridelia restyasa</i>	?	Phatarphod	Euphorbiaceae	Medium size tree	Rheumatism	Bark (paste)
20	<i>Buchanania latifolia.roxb</i>	Almondette tree	Charoli	Anacardiaceae	Middle size tree	Rheumatism	Gum (internally used)
21	<i>Caesalpinia Crista</i>	Fever nut, Bonduc nut, Nikkar nut	Wakeris	Leguminosae/ caesalpinaceae	Robust, woody climber	Liver disorders	Roots (paste)
22	<i>Calamus rotang</i>	?	Rotam	Palmae, Arecaceae	Type of bamboo	Abdominal tumours	Roots (decoction)
23	<i>Calophyllum inophyllum</i>	Indian Laurel, Alexandrian laurel	Undi	Guttiferae	Medium size tree	Skin disease	Oil of seeds
24	<i>Calophyllum wightianum</i>	?	Babbi	Guttiferae, clusiaceae	Big tree	Antileprotic	Seed oil
25	<i>Calotropis gigantean, R. Br.</i>	Giant Milk-weed	Rui	Asclepiadaceae	Tall shrub	Fever, lung disorders,	Tincture of leaves, leaves, Bark, (extract)
26	<i>Calycopteris floribunda</i>	?	Ukshi	Combretaceae	Hard wooded climber	Jaundice	Fruits (decoction)
27	<i>Cansjera rheedii,</i>	?	Deplus	Olacaceae	Climbing	Cold,	Roots

28	<i>Gmel Capparis Zeylanica</i> , linn	Ceylon caper	Katya Ghosvel	Cappardaceae	shrub Rigid, much branched thorny shrub	headache Antiseptic ,	(decoction) Root (decoction)
29	<i>Careya arborea Roxb.</i>	Slow-match tree	Kumbyo	Myrtaceae/ Barringtoniaceae	Middle size tree	Inflammation cough and cold	Bark (decoction)
30	<i>Carissa caranda</i>	Christ's thorn, Bengal currant	Kanta	Apocynaceae	Thorny big shrub	Urinary disorder	Root (decoction)
31	<i>Casearia esculenta, roxb</i>	?	satanguem	Flacourtiaceae/ samydaceae	Small tree	Piles, diabetes hepatic enlargements	Roots (extract)
32	<i>Cassia fistula, linn</i>	Golden shower, Indian Laburnum	Ballo	Leguminosae (sub-family :- Caesalpiniaaceae)	Middle size tree	Astringent	Seeds (powder) leaves (extract)
33	<i>Cassia tora, linn</i>	Sickle senna Ringworm plant	Taikhilo	Leguminosae	Annual fetid herb	Skin diseases snake bites	Leaves (paste) Roots (paste)
34	<i>Casuarinas equisetifolia</i>	Casuarina, sheoak, Australian or whistling pine, Beefwood	Suru	Casuarinaceae	Big tree	Diarrhoea.	Bark (decoction)
35	<i>Cinnamomum zeylannicum</i>	Cinnamon, Ceylon cinnamon	Dalchini / Tikhi	Lauraceae	Large tree	Diabetes	Leaf (decoction)
36	<i>Cissampelos pareira</i>	Velvet-leaf pareira, pareira Brava	Bhatvel	Menispermaceae	Climber	Painful menstruation, cramps	Roots (decoction)
37	<i>Citrus medica, Linn</i>	Citron	Mavling	Rutaceae	A low shrub	Diabetes	Roots (extract)
38	<i>Clerodendron infortunaturn</i>	?	Saykile	Verbenaceae	Middle size tree	Rheumatism cramps	Root (extract)
39	<i>Cocos nucifera</i>	Coconut palm	Maad	Palmae, Arecaceae	Tall erect tree	Urinary disorder	fruit (water)
40	<i>Coculus macrocarpus</i>	?	Ajravel	Menispermaceae	Shrub climbing to a great height	Wounds	Roots (paste)
41	<i>Colaus amboinicus</i>	Indian Borage	Carmalo	Lamiaceae	Dedicate plant	Urinary disease	Leaves (extract)
42	<i>Croton oblongifolius, Roxb</i>	?	Ghanasurang	Euphorbiaceae	Middle size tree	Enlargement of lever	Bark (paste)
43	<i>Curcuma zedoaria</i>	Zedoary, zerumbet	Ambehalad	Zingiberaceae	Annulate tuber (herb)	Body ache in cold	Rhizome (powder)
44	<i>Curuculigro orchioidas</i>	?	Masaalkanda	Amaryllidaceae, Hypoxidaceae	Small shrub	Jaundice, urinary disorder	Rhizome (powder)
45	<i>Dalbergia latifolia</i>	East Indian Rose wood, Bombay black wood	Siso	Papilionae ceae / fabaceae	Big tree	leprosy	Bark paste
46	<i>Dillenia pentagyna</i>	?	Karmal	Dilleniaceae	Big tree	Wounds / cuts	Tender leaves (paste)
47	<i>Diospyros embryapteris</i>	Gaub persimmon, Ribor ebony	Kalegad	Ebenaceae	Medium size tree	Sore throat (to jangle)	Fruits (infusion)
48	<i>Entade pusaetha</i>	Garbee Bean Mackay Bean, Elephant creeper	Garyet	Mamosuceae	Creeper	Ulcers	Woods, bark (paste)
49	<i>Eucalyptis globules, labill</i>	Blue-Gum tree, Australian gum tree	Nilgiri	Myrtaceae	Middle size tree	Dysentery antiseptic	Bark (decoction) leaves (extract)
50	<i>Eugenia jambolana</i>	Jamun	Jambul	Myrtaceae	Large tree	Diabetes dysentery	Fruits (powder)

Table 2: Some of the plants with local name, parts used in medicine by the traditional herbal healers of South district

Sr. No	Botanical name	Plant Name English Name	Local Name	Family	Habit	Disease	Plant parts used & formulation
1	Abutilon indium, linn	Country mallow Chinese bell flowers	Pattari	Malvaceae	Woody perennial shrub	Urinary, kidney infections	Leaves Roots (decoction)
2	Aahatoda varcca	Malabar nut, vasaca	Adulso	Acanthaceae	Medium size shrub	Cold, cough	Leaves (extract)
3	Aegle Marmelos	Bengal Quince	Bel	Rutaceae	Medium size tree	Diarrhoea as tonic	Root (powder) Seed in piles, Bark in bronchitis
4	Albizzia lebbec	Siris tree, east Indian wainut	Shiras	Mimosaceae	Large tree	Piles, bronchitis	Gas trouble, antidote for scorpion and insect stings
5	Allophylus cobbe, Blume	Soap nut	Ritho	Sapindaceae	shrub		Roots (extract)
6	Anacardium occidentale	Cashew nut	Kaju	Anacardiaceae	A tree	Stomach ache	Fruit (juice)
7	Andrographis paniculata nees	?	Kiraitem	Acanthaceae	Annual herb	Stomach ache worms	Whole herb (decoction)
8	Artocarpus hirsute	?	Ranpanas	Moraceae	Tall tree	Wounds and cuts	Leaves (extract)
9	Artocarpus lakoocha Roxb	Mankey Jack	Otamb	Moraceae	Large tree	Crated skin	Bark (paste)
10	Arundinella gigantea Dalz	?	Jivnal	Gramineae	A tall grass	Bowel complaints in children	Tender leaves (extract)
11	Asparagas racemosus, Wild	Indian asparagus	Sosro	Liliaceae / Asparagaceae	Scandent, Woody shrub	Rheumatism, blood diseases, urinary troubles	Roots (powder)
12	Atylosia scarabaeoides Benth	?	Ghosvel / jangli Tur	Leguminosae / papilionaceae / Fabaceae	Herbaceous twiner	To remove worms from children	Whole herb (extract)
13	Averrhoa bilimbi, linn	Biilimbi tree / sorrel	Bimblam	Oxalidaceae / Averrhoaceae	Small tree	Astringent	Fruit (pulp)
14	Bambusa vulgaris	Spiny or Thorny Bamoo	Maan	Germineae, poaceae	Tall Bamboos	Blood purifier	Stem (decoction)
15	Boerhaavia diffusa linn	Horse-purslane, Hogweed	Punarnava	Nyctaginaceae	A diffuse prostrate herb	Gonorrhoea, urinary problems	Leaves, roots (decoction)
16	Bridelia restusa		Phatarphod	Euphorbiaceae	Medium size tree	Rheumatism	Bark (paste)
17	Caesalpinia crista	Fever nut, Bonduc nut, Nikkar nut	Wakeris	Leguminosae/ caesalpinaceae	Robust, woody climber	Liver disorders	Roots (paste)
18	Calotropis gigantea R.Br.	Giant Milk-weed	Rui	Asclepiadaceae	Tall tree	fever lung disorders	Leaves (extract)
19	Calycopteris floriburda	?	Unkshi	Combretaceae	Hard wooded climber	Jaundice	Fruits (decoction)
20	Capparis zeylanica, linn	Ceylon caper	Katya Ghosvel	Cappardaceae	Rigid, much branched thorny shrub	Antiseptic, also used for thorn like appearances in the throat of children.	Root (decoction)
21	Careya arborea Roxb.	Slow-match tree	Kumbyo	Myrtaceae/ Barringtoniaceae	Middle size tree	Inflammation cough and cold	Bark (decoction)
22	Careya arborea Roxb.	Slow-match tree	Kumbyo	Myrtaceae/ Barringtoniaceae	Middle size tree	Inflammation cough and cold	Bark (decoction)
23	Carissa carandas	Christ's thorn, Bengal currant	Kanta	Apocynaceae	Thorny big shrub	Urinary disorder	Root (decoction)
24	Casearia esculenta Roxb.	?	Satanguem	Flacourtiaceae/ samydaceae	Small tree	Piles, diabetes hepatic enlargements	Roots (extract)
25	Cassia fistula, linn	Golden shower, Indian Laburnum	Ballo	Leguminosae (sub-family :- Caesalpinaceae)	Middle size tree	Astringent	Seeds (powder) leaves (extract)

Result and Discussion

The enumerations of medicinal plants being used by the local or traditional herbal healers (Vaijyas) have been documented from North district. The plants species being used as folk medicines are enumerated with their botanical names local names, family, habitat, disease which it cures, plant parts used and formulation. (Table 1)

Similarly the enumeration of medicinal plants have been recorded from the traditional herbal healers from South district the plant species being used as folk medicines are enumerated with their botanical names, local names, family, habitat, disease which it cures, plant parts used and formulation have been documented in (table II)

Table 3: Documentation of number of Herbal healers.

Sr. No.	Name of the Village	District	Traditional herbal healers
1	Parcem	North Goa	02
2	Pomburfa	North Goa	02
3	Carambolim	North Goa	04
4	Rachol	South Goa	01
5	Marcela	North Goa	04
6	Betki	North Goa	06
7	Poinginium	South Goa	02
8	Ponsule	North Goa	03
9	Fatorpa	South Goa	02
10	Selaulim	South Goa	01

**Note :- Indicates the number of herbal healers author met in that area.*

In Goa tribal people strongly believe in folk medicines, which are easily available fresh for them. Rich in green biodiversity Goa the land of sun and sand has herbal healers who are showing great faith in home remedies. These folk medicines were practised during the Atharva Vedic Period and are also now practised in 21st century. Not only tribal's but also all the villagers and people who stay in city area still practice these local methods as they have been practised by their fore fathers from time immemorial in their families.

Goa is blessed with rich and diverse heritage of cultural tradition as people of major three religions hindu, muslim, and catholic stay in harmony in the state. The cultural traditions are associated with the use of domestic as well as wild plants. Their use is still a traditional running among the people of Goa. The ethno-botanical study of the same has to be done still in details, however Garcia da orta (1563), The personal physician to the viceroy of the Portuguese colonies in India, with his vast experience of 30 years contact with the local Ayurvedic Vaidyas and the use of Indian medicine, published *coloquios dos simples e drogras be cousas medicinais da India. E Assi dalguas frutas achodas nella to cantes a medicine, pratica e outras cousas boos pera saber copostos*, an interesting Pre-Linnean publication, presenting a details account of 57 more commonly used Indian medicinal plants from Goa. Later Roxburg (1824) published "Flora Indica" which occasionally referred plants of kankon area, Dalgell. Gibson (1861), Nairne (1894), have also referred to the plants from this area. Hooker (1872-97) in his "Flora of British India" often quoted the earlier botanists in the context of plants occurring in kankon and Goa in particular. Manoel Galvao de silva (1862) was forced by the Portuguese Govt. To study the nature history of Goa, who prepared the work on 163 species of indigenous and exotic plants. D. G. Dalgado (1894) published some materials on plants of Goa. In 1898 he also published book on "Flora the Goa e savantvadi" in which he presented at list of 731 wild species. Alike lots of work was done on enumeration of the plants species of Goa. Rao (1985-1986) recently took comprehensive study of Flora of Goa, Daman, Div, and Dadra & Nagerhaveli.

The study of plants should be still done in detail. In Goa the traditional herbal healing procedure / prescription contains many medicines for a single ailment. As per the availability of fresh herbs certain methods only are selected by the local herbal healers to treat the ailments. People still continue to take the medicines given by herbal healers as they are free of side effects and are sure medicines for the illness.

This paper will furnish in brief about the ethno botanical medicinal plants found in Goa and very popular in Goa. Even though it is practised from time immemorial the ethno-medicinal data need verification on chemical and pharmacological grounds. Clinical trials on biological activities to improvise the efficacy and safety are also required.

Conclusion

Based on the above observations and discussions on the folk medicines of Goa, following suggestions can be made as recommendations:

- The awareness Campaign should be started and importance of conserving folk medicines should be percolated to the grass root level to the people.

- Knowledge of medicinal plants and medico ethno botanical culture should be exchanged from the previous generations to the next. It should be encouraged at all levels.
- The medico–ethno botanical knowledge and culture of the Goa folk medicine should be protected from modernization, urbanization, and careless use of the same.
- Proper conservation strategies should be taken up with the development and utilization of modern technology like ex-situ conservation with the help of biotechnology.
- Proper guidance should be given to identify the keystone species of the various medicinal plants of different area of Goa
- Steps should be taken to conserve and protect the endangered wild species of medicinal plants and the plants having medicinal value at large.
- Every primary health care in Goa should have at least one Ayurvedic Doctor to promote the knowledge of Ayurveda with help of medicinal plants and also heal the patients with natural medicines, this will also help to promote folk medicines of Goa.

The information recorded from herbal healers indicated that the local tribal's of more regions poses good knowledge of herbal drugs but their continuous and progressive exposure to modernisation may result in the extinction of this rich heritage of knowledge in the coming period. The present study reveals that the majority of species are being used in medicine belonging to the families reveals.

The preparation of herbal medicines are made by using leaves, buds, flowers, seeds, barks, underground parts like roots rhizomes also latex. The methods of application of mediums are as paste, powder, decoction, extracts, juices, giving smoke or ask to chew.

The present paper deals with the traditional knowledge collected on medicinal plants used against several diseases, from traditional herbal healers of North and south district of Goa, India. Information collected from the traditional herbal healers, locally known as “vajj” has revealed that plant / plant parts of 130 medicinal plants of North district of Goa and 86 medicinal plants of South district of Goa of forest as well as domestic origin are being utilized as paste, powder, juice, extracts, latex, decoction, smokes, for the treatment of several human diseases. Habit and utilization of plants and the percentage of the different formulation of herbal medicine being prepared by the herbal healers of the study area have also been documented.

The paper reports medicinal plants used by the Goa folklore, in various areas of Goa.

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