

**AN ETHNO-BOTANICAL SURVEY ON SHAKAVARGA OF
ANAMALAI TRIBES****Dr. Bhagyalaxmi C. V.*¹, Dr. Shreedevi H. Huddar² and Dr. Elleri Anup Kumar³**

*¹PG Scholar, Department of Dravyaguna, Shri Shivayogeeshwara Rural Ayurvedic Medical College and Hospital, Inchala, Belagavi District, Karnataka.

²Professor and Head of the Department of Dravyaguna, Shri Shivayogeeshwara Rural Ayurvedic Medical College and Hospital, Inchala, Belagavi District, Karnataka

³Assistant Professor, Department of Dravyaguna, Shri Shivayogeeshwara Rural Ayurvedic Medical College and Hospital, Inchala, Belagavi District, Karnataka.

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***Corresponding Author**

Dr. Bhagyalaxmi C. V.

PG Scholar, Department of
Dravyaguna, Shri
Shivayogeeshwara Rural
Ayurvedic Medical College
and Hospital, Inchala,
Belagavi District,
Karnataka.

ABSTRACT

The Ethnic people residing in different geographical belt of India depend on the wild plants to meet their basic requirements. The Ethnic communities have their own secret Ethno-medicinal and Ethno-pharmacological knowledge about the plants that are available in their surroundings which have been serving rural people. The survey is conducted to study the Ethno-botanical uses on Shaka-varga of Anamalai tribes of Velimudi hills, Kadamparai village, Southern Western ghat of Anamalai hills of Coimbatore District, Tamilnadu. This study reveals that the important wild edible plants viz: Shaka-varga of Muthuvars, the tribal community living at the fringes of Kadamparai village, ATR, Pollachi division, Anamalai. The Shaka-varga in Sanskrit is the group of vegetables which are described as Ahara (food) by ancient Acharyas in their Samhitha. The botanical exploration is to identify and search the economic important medicinal plants which can be used as food in prevention of diseases and maintain the health in the healthy. Methodology employed are detailed screening on Shakavarga from Ayurveda classics, Nighantus (lexicon),

modern literature, contemporary texts, journals and the websites related to Shakavarga, wild edible plant, their botanical sources, pharmacological properties and research updates are

reviewed for conduction of survey on Ethno-botany. The survey reveals that there are 36 species of the plants belonging to 23 families used by the tribes of Anamalai.

KEYWORDS: *Shakavarga*, Ethno-botany, Anamalai tribes, ATR.

INTRODUCTION

In the present era of globalization, Ayurvedic medicines have gained the prime importance. The extensive usage of plants results in the extinction of the species. This has resulted in genetically modification of the plants with their different chemical composition which have lead to reduction in the quality of Ayurvedic medicines. Therefore, it is important to know the properties of medicinal plants which exist in the nature with their equivalent species mentioned in Ayurvedic formulation which can be used as the Pratinidhi Dravya, of that particular drug. The Ayurveda treatise emphasizes on collection of plants, their identification, availability and usage. For instance, in Charaka Samhitha, Sutrasthana chapter 1:120, emphasized on the identification of plants from the shepherds and the people who are living in the forests. The online encyclopedia project Wikipedia explains ethno-botany is the study of a region's plants and their practical uses through the traditional knowledge of a local culture and people. The ethnic people residing in the different geographical belts of India, depends on wild plants to meet their basic requirements and ethnic community have their own secret Ethno-medicinal knowledge about the plants available in their surroundings which has been serving rural people.

The term Ethno-botany does not necessarily mean the study of how 'other' people use plants. It is not restricted to study the medicinal plants in indigenous cultures. The use of Ethno-botany in plant selection entails a careful recording of the relationship between indigenous communities and plants.^[1] The idea of ethno-botany is first proposed by the early 20th century Botanist John William Harshberger. The practice of ethno-botany is thought to be much earlier origins in the first century AD when a Greek physician by the name of Pedanius Dioscorides wrote an extensive botanical text detailing the medicinal and culinary properties of "over 600 mediterranean plants" named 'De Materia Medica'.^[2]

The Ethno-botanical survey indicates approximately 2500 plant species available in Anamalai hills located in the Southern-Western Ghats of Coimbatore. There are 6 tribal communities viz: Irulars, Malasars, Malamalasars, Puliyas, Kadars and Muthuvars residing in the fringes of Indira Gandhi Wild Life Sanctuary of Pollachi, Valparai and Udumalaipettai (Coimbatore

district). They live in the settlement area. Some of the plants are cultivated by the tribes for their personal use and not for commercial purposes. The present study is on the Ethno-botany on Shaka Varga of Muthuvars residing in the Kadamparai hamlets of Velimudi hills, Anamalai. It is the Sadharana desha (Vegetation). Ayurveda explains Sadharana desha as mixed land (Anoopa desha and Jangala desha). The Monier Williams Sanskrit English dictionary describes Sadharana desha as the common land or wild marshy land.

The Shakavarga in Sanskrit is the Group of vegetables. There are many plants in Shakavarga which are used as Ahara (diet) and Aushadha (medicine), some of the plants which are mentioned in Ayurveda classics are to be identified. There are total 118 and 133 Shaka Varga Dravyas mentioned in Charaka Samhita and Sushruta Samhita respectively. The Astanga Hridayam and Astanga Sangraha mentioned 144 and 150 Shakavarga dravyas respectively.^[3] The Shakavarga includes Patra shaka (leafy vegetables), Kanda shakavarga (aquatic stem vegetables), Phala shakavarga (vegetable fruits), Pushpa Shakavarga (flower vegetables), Moola Shakavarga (Tubers), Salana shaka (vegetables for seasoning) and Pallava (tender leaves of the trees). The classification on Shakavarga varies from text to text. Consumption of these vegetable helps in maintaining the health in the healthy individual and curing the diseases. Certain vegetables are Pathya (suitable) and Apathya (not suitable) for consumption. The vegetables are consumed for the nutrition and as the best calorie diet. The medicinal herbs are used in the small quantities and have huge medicinal properties.

METHODOLOGY

Study area: Anamalai hills located 10° 13' and 10° 31'N between 76° 52' and 77° 23' east longitude of South-Western Ghats of forest division in Coimbatore district, Tamilnadu. The Velimudi hills, Kadamparai hamlet, Valparai range in Anamalai Tiger Reserve. The area is isolated approximately 54 kms from Pollachi, approximately 37 kms from Attakatti, Coimbatore district.

Duration of the study: 10 months from the date of application.

Permission for the entry to ATR: Application is written in the ascribed format and enclosed along with the filled form of Objectives of the Research, Letter from the College Principal and the copy of Identity card/ Aadhar card to the Conservator of Forests and Field Director of ATR at Coimbatore Forest Department office along with email application to cwlw_wildlife3@yahoo.in, fielddirectoratr@gmail.com. This application is reviewed with

the hard copy and submitted at Conservator of Forest and Field Director office. The Proceedings of the Principal Chief Conservator of Forests and the Chief of Wildlife Warden forwarded through the email.

The date and the schedule of the visits are informed to Conservator of Forest and the Field Director, Anamalai Tiger Reserve, Coimbatore and Deputy Director, Pollachi in advance. The Ranger accompanied during each visit.

Interviews with Tribal practitioner: The Ethno-botanical plant information on Shakavarga during 2022-23. The information is collected from the tribes who practiced and have experience in treating various diseases. The questionnaire allowed the descriptive response on the plant, such as part used, medicinal uses and the mode of preparation. The plants are taxonomically identified by botanist Dr.V.Aravindhan, Assistant Professor, Department of Botany, Kongunadu Arts and Science College, Coimbatore. The specimens are preserved in the herbarium of Department of Dravyaguna, Shri Shivayogeeshwara Rural Ayurveda Medical College and Hospital, Inchal, Belagavi, Karnataka and to be submitted to Botanical Survey of India, Coimbatore.

Literary sources: Ayurvedic Classics, Indexed Journals, Research update Journals and Website on wild edible plants, Shakavarga, Ethno-botany.

DISCUSSION

Multiple day survey study program conducted along with the Botanist. The total 36 species belonging to 23 families of plants are recorded as wild edible plants viz: Shaka varga. The surveyed plants are *Achyranthes aspera*, *Alteranthes sessilis*, *Alteranthes pungens*, *Amaranthus spinosus*, *Amaranthus viridis*, *Anaphyllum beddomei*, *Asystasia dalzelliana*, *Boerhavia diffusa*, *Brassica juncea*, *Cassia tora*, *Celosia argentea*, *Cissus quadrifolia*, *Cleome monophylla*/ *Cleome viscosa*, *Coccinia grandis*, *Commelina beghalensis*, *Digera muricata*, *Diplazium esculentum*, *Leptadenia reticulata*, *Marsilea quadrifolia*, *Polygonum glabra*, *Portulaca oleracea*, *Pupalia lappacea*, *Sida acuta*, *Solanum nigrum*, *Trianthema portulacastrum*, *Solanum surattense*, *Solanum torvum*, *Solanum pubescens*, *Solanum melongena*, *Acorus calamus*, *Gloriosa superba*, and *Ipomea paniculata*.

Apamarga

Apamarga is identified as *Achyranthes aspera* (chaff flower) is the erect plant, 30-80cms height and hairy stem. *A. aspera* and *A. acuminata* are synonymous which refer to the same plant. In Astanga Hridaya, Sarirasthana chapter 1 sloka 39, there is a reference about Gouradanda Apamarga. All nighantus have mentioned two varieties of Apamarga viz: Sveta (white) and Rakta (red). The Red variety is identified with *Pupalia Lappacea*.^[4] Therefore, the plant *P. lappacea* is identified in Ayurveda.

Matsyakshi

The plant *Alternanthera sessilis* (stalkless joyweed) and *Alternanthera pungens* (Khaki weed) are the Matsyakshi. The morphological features of these plants are differentiated on basis of size and stomata type.^[5] These are considered as the varieties of Matsyaksi. It is described among Gandhadorva, Durvadi varga in Abhidhana manjari Nighantu.^[6] We can find references of Matsyakshi in Kaiyadeva Nighantu, Aushadhiya Varga Chapter 1 sloka 728-730, Dhanvanthari Nighantu, Karaviradi varga along with Doorva Chapter 4 sloka 139-143, Nighantu sesha, the Shaka Kanda along with Brahmi in chapter 4 sloka 343 and Madanapala Nighantu in Shasta gana chapter 6, along with Gandha doorva. These are considered as the varieties of Matsyaksi. The Ethno-medicinal use is as contraceptive and hair tonic.

Tanduliya

Amaranthus spinosus and *Amaranthus viridis* are referred to Tanduliya. Charaka samhita describes Tanduliyaka as dry, anti-poisonous and useful in bleeding disorders. The ethno-medicinal uses of *A. spinosus* and *A. viridis* are antidote for snake bite and scorpion sting.

Anaphyllum beddomei

It is the tall corn bearing herb from the family Araceae known as Keerikizhangu in vernacular Tamil language. It is the leafy vegetable used by the tribes. The description on this plant is not found in Ayurvedic classics and Nighantus.

Asystasia dalzelliana is the plant from the family Acanthaceae, synonymous to *Asystasia gangetica*. No description on this plant is seen in Ayurvedic texts.

Punarnava

Boerhavia diffusa from the family Nyctaginaceae is referred to Punarnava. It is used as vegetable which is useful in kidney related disorders. It is widely spread on the roads of

Coimbatore. *Boerhavia diffusa* referred to Punarnava, the plant named *Trianthema portulacastrum* is adulterated with Punarnava. According to Dr.JLN shastry, the author of Text book of Dravyaguna Vijnana, the plant *T. portulacastrum* is considered to be the Sveta punarnava. The term Varsabhu is used for *T. portulacastrum* origin in Aizoaceae. In Charaka Samhitha, the plant *B.diffusa* is Vayastapana dravya, Kasahara dravya, Anuvasanopaga dravya and Svedopaga dravya.^[7] *B.diffusa* and *T. portulacastrum* is proved to be potential herb in diuretics.^[8]

Chakramardha

Cassia tora is the edible and medicinal leguminous plant from the family Fabaceae and is known to possess insecticidal properties against a wide range of plant-feeding insects.^[9] It is the important plant in Ayurveda referred as Chakramardha. The tribes use this plant as vegetable and for Skin diseases.

Mayurashika

The certain website describes the plant *Celosia argentea* origin in family Amaranthaceae is Mayurashika. Neelakanta shika and Sahahri are the synonyms found in Bhavaprakasha Nighantu for the plant Mayurashika and is useful in Atisara (diarrhoea). The Ethno-medical use of *Celosia argentea* is for redness of eyes and skin disorder. *Celosia argentea* origin in family Amaranthaceae is used by the tribes.

Asthisamharaka

Cissus quadrangularis is the fleshy perennial climber with quadrangular stem. It is referred to Asthisamharaka and is not described in Bruhatrayees (Charaka Samhitha, Sushruta Samhitha, Astanga Hridaya/ Sangraha). Nighantus have mentioned it as a potent drug for fracture healing.^[10]

Rajika or Sarshapa

Cleome monophylla, in vernacular Tamil language is Ellukku-sakkalathi. The Ellukku in Tamil means Sesame and Sakkalathi is second wife. The certain website viz Flora of India claims *Cleome monophylla* is the wild relative of the plant *Sesamum indicum*.

Bimbi

Coccinia grandis is referred to Bimbi. Bhavaprakasha Nighantu describes Tundi, Tundikeri and Bimbika as the synonym of Bimbi. Bhavaprakasha Nighantu categorized Bimbi under

Shaka Varga^[11] whereas Charaka Samhitha included under Moolini Dravya. The Ethno-medicinal use of *Coccinia grandis* is good in relieving ear pain.

Kanchata

Commelina benghalensis origin in the family Commelinaceae is Kanchata in Sanskrit.^[12] The name Kanchata for *Commelina beghalensis* is found in KM Nadkarni's Indian Materia medica; certain website describes Karnamorata, Karnasphota, Kosapushpi and Marishajalaja as *C. beghalensis*. The Ethno-medicinal use of *Commelina benghalensis* is to increase sperm count.

Aranyavastuka

Digera muricata in Sanskrit is Aranya, Aranyavastuka, Kunanjara and Kuranjara. It is also known as False Amaranth. It is used locally as leafy vegetable to relieve from constipation.^[13]

Diplazium esculentum is commonly known as wild vegetable in the family Athyriaceae. *Diplazium esculentum* is one of the important species of wild ferns, which is frequently consumed by people living in the hilly areas; it is not growing on much higher altitude.^[14] Data on this plant is not available in Ayurvedic literature. The Ethno-medicinal use *Diplazium esculentum* is fever, diarrhea, Asthma and to maintain health.

Jivanti

Leptadenia reticulata, origin in family Apocynaceae is referred by different names in Ayurveda such as Jivanti, Jivaniya, Jivapushpa, Hemavati, Jivana, Shakashreshtha, Payaswini, Maangalya, and Madhusrava.^[15] Acharya Charaka described Jivanti in Jivaneeya gana, Snehopaga, Svasahara and Vayasthapana. The plant *Leptadenia reticulata* is a climber and is mainly indicated in eye disorder.^[16] The Ethno-medicinal uses of this plant is to maintain the health and in all diseases.

Sunishannaka

Marsilea quadrifolia is the aquatic fern in the family Marsileaceae is the plant referred to Sunishannaka. The Charaka Samhitha mentions this plant under Shakavarga and effective in alleviating Tridosha and bowel binding.^[17] The ethno-botany of *Marsilea quadrifolia* is crushed and juice extract is used as an antidote for snake bite and also used in abscess. *Polygonum glabrum* is perennial shrub which is synonymous to *Persicaria glabra*. The common name of this plant is dense flower knotweed and is referred to Parvani in

Ayurveda.^[18] The Ethno-medicinal use of this plant in pruritis condition, the seeds of the plant are dried and powdered, then mixed with water for application on the affected areas.

Parvani

Portulaca oleracea is the succulent annual perennial herb. Purslane is botanically known as *P. oleracea* which is also called Portulaca. Purslane contains the highest content of vitamin A among green leafy vegetables. It is useful in wound healing, inflammation and antimicrobial effects.^[19] The Ethno-medicinal use of *P. oleracea* is for piles and constipation.

Lonika

Pupalia lappacea is erect under shrub used by the tribes in inflammation and snake bite. The *Pupalia lappacea* extract have shown anti-cancerous activity against chronic myeloid leukemia.^[20] The ethno-medicinal uses of *Pupalia lappacea* is for cough, snake bite and inflammation.

Variety of Bala

Sida acuta is used in Paralysis along with *Polygonum glabrum* by the people in Velimudi range. *Sida acuta* origin in Malvaceae is identified as variety of Bala plant. *Sida cordifolia* is the most important plant in Ayurveda. The Sanskrit name of *Sida cordifolia* is Bala. It is mainly used in Vata vyadhi (Neurological disorder), The ethno-botany on *Sida cordifolia* is paralysis and pain all over the body.

Kakamaci

The plant Kakamaci identified as *Solanum nigrum* is Tridoshagna (balances the three doshas). Cakrapani Datta commentary on Charaka Samhitha, 27th chapter says that the special quantity is discussed on Sushruta samhitha on Kakamaci is Tikta Rasa (bitter to taste) pacifies Vata because of its hot potency. But Charaka Samhitha calls Kakamaci as “Nati Ushna Nati Shita” which means not excess hot nor not excess hot in potency.

Vrischira

Trianthema portulacastrum is Vrishchira in Sanskrit. It is used as an adulterant of Boerhavia diffusa (Punarnava). The *T. portulacastrum* is wrongly equated as Svetapunarnava.^[21] The Ethno-medicinal uses *T. portulacastrum* is in urine retention and oedema.

Sarshapa

Brassica juncea is identified as Sarshapa or Rajika in Sanskrit. The ethno-medicinal use of this plant is for skin diseases. The plant name *Eryngium foetidum* found near the hamlets, it smells like Coriander plant. The plants explained are used as leafy vegetables by the tribes in Velimudi, Anamalai hills. Table1.

Brihati and Kantakari

The fruits of the plants of *Solanum* species were used as fruit vegetable. They are also used for immunity and digestion. We identified different species from Solanaceae family like *Solanum gracile* (wild tomato) and *Solanum pseudocapsicum*. *Solanum gracile* is cultivated for domestic purpose; the plant *Solanum pseudocapsicum* is used as garden plant. The plant *Solanum surattense*, *Solanum torvum*, *Solanum pubescens*, *Solanum melongena* and *Solanum trilobatum* are used as medicine by the tribes. Table2.

Vidari, Langali, Vacha: Tubers

Tubers used by the tribes in Velimudi hills of Anamalai region for medicinal purpose is *Acorus calamus*, *Gloriosa superba* and *Ipomea paniculata* are referred to as Vacha, Langali and Vidari respectively in Sanskrit.^[22] Table3.

Charaka Samhitha explains Vidari as Jivana (nourishing) and good for throat. Langali which is identified as *Gloriosa superba* is the main food of the tribes and they are also used in snake bite and scorpion bite. Vacha is used in pediatric care by tribes. They are boiled along with rice and the water portion is used for stomach ache in children. They are dried and used in storing rice and protecting from rice weevils and bugs. Table3.

Sumukha

The plant *Ocimum americanum* is referred to as variety of Tulsi with Sanskrit name Vanatulsi. Table4. Kuthera is not identified. It is considered as the variety of Tulsi or *Ocimum* species plant. In Astanga Hridaya, the plant Sumukha is identified as *O. americanum* is included in Salana Shaka Varga^[23], but not mentioned in Charaka Samhitha. The plant Surasa is identified as *Ocimum sanctum*. The Ethno-medicinal use of *O. americanum* is squeezing the leaves, mixing with kerosene for external application on head for headache. This plant promote digestion, destroys the sperms and intestinal worms.^[24]

Dugdhika

Euphorbia hirta is the herb found on the roadsides in Coimbatore district; the ethno botanical use is in respiratory disorders mainly in Asthma. The whole plant is cooked in water and taken as a drink or chewed raw for their extract and swallowed. The recent researches on *E.hirta* have proved its efficacy in Sars-Cov2 Mpro^[25] which is widely used in Phillipines and tropical Asia.

Table 1: Surveyed leafy vegetables- *patra shaka*.

Botanical name	Family	Sanskrit name	Local name	Habit	Ethno botany uses
<i>Achyranthes aspera</i>	Amaranthaceae	Apamarga	Nayuruvi	Herb	Wound healing
<i>Alternanthera sessilis</i> <i>Alternanthera pungens</i>	Amaranthaceae	Matsyakshi	Ponnankanni Mullu ponnankani	Herb	As Contraceptive, hair tonic & leucoderma
<i>Amaranthus spinosus</i> <i>Amaranthus viridis</i>	Amaranthaceae	Tanduliya	Mullukerai Kuppaikerai	Herb	Scorpion sting and snake bite
<i>Anaphyllum beddomei</i>	Araceae	-	Keerikizhangu	Herb	-
<i>Asystasia gangetica</i>	Acanthaceae	-	-	Herb	Swelling and rheumatism
<i>Boerhavia diffusa</i>	Nyctaginaceae	Punarnava	Mukkarattai	Herb	Urinary problems
<i>Brassica juncea</i>	Brassicaceae	Rajika, sarsapa	Kadukku	Herb	Skin diseases
<i>Cassia tora</i>	Fabaceae	Chakramarda	Thakara	Herb	Skin problems
<i>Celosia argentea</i>	Amaranthaceae	Mayurashika	Pannai	Shrub	Redness of eyes and skin diseases
<i>Cissus quadrangularis</i>	Vitaceae	Asthisamharaka	Pirandai	Climber	Wound healing
<i>Cleome monophylla/</i> <i>viscose</i>	Cleomaceae/ Capparaceae	Variety of Ajagandha	Ellukku- sakkalathi/ Vellai	Herb	Relieve ear pain
<i>Coccinia grandis</i>	Cucurbitaceae	Bimbi	Kovai	Herb	In jaundice
<i>Commelina benghalensis</i>	Commelinaceae	Kanchata	Kanang kerai	Herb	Increase sperm count
<i>Digera muricata</i>	Amaranthaceae	Aranya Vastuka	Sunnambukeerai	Herb	Digestion and constipation
<i>Diplazium esculentum</i>	Athyriaceae	-	-	Herb	Fever, diarrhoea, asthma
<i>Euphorbia hirta</i>	Euphorbiaceae	Dugdhika	Amampatchai arisi	Herb	Respiratory disorder
<i>Leptadenia reticulata</i>	Apocynaceae	Jivanti	Palai	Climber	All diseases
<i>Marsilea quadrifolia</i>	Marsileaceae	Sunisannaka	Aarai	Herb	Snake bite and abscess
<i>Polygonum glabrum /</i> <i>Persicaria glabra</i>	Polygonaceae	Parvani, Manj	Sivappukumbako daali	Herb	Pruritis
<i>Portulaca oleracea</i>	Portulacaceae	Brihalloni, lonika, loni	Pasale keerai	Herb	Piles and constipation
<i>Pupalia lappacea</i>	Amaranthaceae	-	Ottotti	Herb	For cough, snake bite, inflammation
<i>Sida acuta</i>	Malvaceae	Bala	Kurunthoti	Shrub	Fever along with

		phannijivika, Nagabala			ginger, pain in the joints, paralysis
<i>Solanum nigrum</i>	Solanaceae	Kakamachi	Chukkuti	Herb	Constipation
<i>Trianthema portulacastrum</i>	Aizoaceae	Vrishira	Charanai	Herb	Oedema, urine retention

Table 2: Surveyed fruits as vegetables - phala shaka.

Botanical name	Family	Sanskrit name	Local name	Habit	Ethno botany uses
<i>Solanum surattense</i>	Solanaceae	Kantakari	Kantakathari	Herb	Cough, digestion
<i>Solanum trilobatum</i>	Solanaceae	Agnialarka, Vallikantakarika	Thuthuvalai	Shrub	Fever and cold
<i>Solanum pubescens / torvum</i>	Solanaceae	Brihati	Sundai	Shrubs	Immunity
<i>Solanum melongena</i>	Solanaceae	Vartaka	Kattukathiri	Herb	Immunity

Table 3: Surveyed tubers as vegetable - khanda/ Moola shaka.

Botanical name	Family	Sanskrit name	Local name	Habit	Ethno botany uses
<i>Acorus calamus</i>	Acoraceae	Vacha	Vasambu	Herb	In children for stomach pain boiled along with rice.
<i>Argyrea pomacea</i>	Convolvulaceae	Vidhara	Manapanchan	Climber	Jaundice
<i>Gloriosa superb</i>	Colchicaceae	Langali	Kanvali- kizhanghu	Climber	Snake bite and scorpion sting
<i>Ipomea paniculata</i>	Convolvulaceae	Vidari	Paalmudukkan kizhanghu	Climber	For lactation and Digestion

Table 4: Surveyed harita varga- green salads.

Botanical name	Family	Sanskrit name	Local name	Habit	Ethno botany uses
<i>Ocimum americanum</i>	Lamiaceae	Vana tulsi	Tulasi	Herb	Headache along with kerosene application

RESULT

The total 36 species belonging to 23 families of plants are recorded as wild edible plants viz: Shaka varga. It is highly useful as vegetables and as medicine by the tribal people. It is observed that the certain Shaka Varga Dravya which is mentioned in the classical literatures of Ayurveda is found to be used by the tribes. It is botanically identified with specific pharmaco-dynamic properties and their specific ethno-botanical uses.

All the Nighantu and Samhithas mentioned Jivanti to be best among Shakavarga Dravyas and Sarsapa (*Brassica juncea*) origin in Brassicaceae family is quantitatively inferior among Shaka varga. Note: *Anaphyllum beddomei* and *Marsilea quadrifolia* are endanger in status.

Leptidnia reticulata is a threatened endangered plant the collection of these plant species is limited. Hence, this plant is not included in the herbarium.

CONCLUSION

The Charaka Samhitha and Sushrutha Samhitha emphasized on the identification of plants from the shepherds and the people who are living in the forests. Dalhana in the commentary on Sushrutha samhitha sootrasthana 3rd chapter says knowledge on identification of dravya can be divided into three branches viz: Namajnana (Nomenclature), Rupajnana (Morphology) and Yogajnana (Therapeutic uses). Among them Yogajnana is considered to be very important criteria for the study of drugs (Dravya) for which the acquaintance of literature is necessary.^[108] There are some plants such as *Anaphyllum beddomei*, *Asystasia dalzellina* and *Diaplazium esculentum* which are not identified or recorded in Ayurveda by Samhitha and Nighantu workers. These can be taken as an Anukta Dravyas (Extra pharmacopial drug) in Ayurveda whereas the plant named *Pupalia lappacea* is identified along with the Red variety of Apamarga.

The plants which are mentioned in Table 1, 2, 3 and 4 are extensively used by the tribes in managing life, health and in disease management. The habitats have changed rendering the creatures extinct or endangered, while others are adapted themselves or evolved. The plant Jivanti (*Leptadenia reticulata*) is superior among the tribes as it is used in all diseases, as the energy booster and to regain immunity.

The *Leptadenia reticulata* is the IUCN red listed endangered plant and the collection of the endangered plants is limited by the Indian government to prevent the extinction of the species. Thus the Prathinidhi dravya play an important role as a substitute in their abundance. The surveyed plants are equally important with respect to the pharmacological actions. Ethno-botanical studies helps in gaining knowledge on plant identification, identification of substitute and also in new drug discovery.

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