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ANALYSIS OF USE VALUE, INFORMANT CONSENSUS FACTOR AND FIDELITY LEVEL OF ETHNOMEDICINALLY USED WILD FRUITS BY TRIBALS IN SELECTED AREAS OF WESTERN GHATS

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ABSTRACT

Ethnomedicinal survey was conducted in certain selected areas of Western Ghats and the field study was carried out in 15 forest division of Tamil Nadu, Karnataka and Kerala states. The ethnomedicinal information of wild fruits was collected through interviews from tribals and traditional healers. A total number of 59 wild fruit species belonging to 57 genera and 39 families used by tribals were recorded. Generally the wild fruits are used as raw or processed, which help to compensate the day-to-day requirements of calories. Wild fruits play significant role in human nutrition, especially as source of carbohydrates, protein, vitamins, minerals, dietary fibers and enormous medicinal potentials. Dietary use of wild fruits nuts and seeds, appear in numerous historical records. So the wild fruit have been identified to have a better nutritional value than cultivated fruits. The data were collected randomly from tribal and traditional healers of 80 informants in the study areas. Data were statistically analyzed by using suitable statistical tools such as Use Value (UV), Informant Consensus Factor (ICF), Fidelity Value (FL) and various ranking methods. Therefore the documented wild fruits can be used for future pharmacological research and awareness creation among the traditional healers and tribals communities at large becomes vital so as to preserve the indigenous knowledge associated with wild fruits species.

Keywords: Ethnomedicine, Statistical Analysis, Western Ghats, Wild Fruits.

INTRODUCTION

At the current growth rate the world population is likely to touch the 7.5 billion mark by end of the year 2020. Mostly, this increase is in the developing or underdeveloped countries, 80% of whose population still relies on a traditional system of medicine based on herbal drugs [1]. With ever-increasing population pressure and fast depletion of natural resources, it has become extremely important to diversify the present day agriculture with the cultivation of some nutritionally potent varieties of fruits in order to meet various human nutrient needs. The ethnic people use a wide variety of wild plants and plant products as their food. India has one of the largest concentrations of tribal population in the world. The forest plays a vital role in the economy as well as daily needs of the tribal. In times of scarcity when the staple food is in short of supply tribal collect many types

of wild fruits to supplement their meager food available at home [2].

India is one of the twelve mega diversity centre in the world. the Western Ghats and is considered to be a home of more than 3500 species of wild plants. Though there are many wild fruits in this region, there is no proper collection, identification, statistical analysis, improvement and agro-techniques for these wild fruit. Hence much emphasis should be given to exploration and collection, in situ or ex situ conservation, studying nutritional and anti-nutritional properties, medicinal values. The fruits are nature's gift to mankind. These wild fruits are chief source of vitamins, minerals and proteins. These constituents are essential for normal physiological well being and help in maintaining healthy state through development of resistant against pathogens [3].

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Wild fruits are generally used as raw or processed, which help to compensate the day to-day requirement of calories. Wild fruits play a significant role in human nutrition, especially as sources of carbohydrates, proteins, vitamins C (ascorbic acid), A, thiamine (B1), niacin (B3), pyridoxine (B6), folacin (also known as folic acid or folate) (B9), E, minerals, dietary fiber and enormous medicinal potential [4,5,6]. It is needed to state that the wild edible fruits contain relatively high quantity of nutrient essential elements like Fe, Cu, Ca, Mn etc, in addition to their proximate properties like protein, carbohydrate, sugar etc, [7].

The Western Ghats provide a large number of plants whose fruits, seeds, tubers, shoots etc., make an important contribution to the diet of the people, particularly those living near forest and other rural areas. These plants not only provide in expensive food but several other useful products like medicine, fiber, fodder, dyes, etc.,. Historically wild fruits and vegetables have been used as medicinal agents. Wild fruits contain a significant level of biological active components that fruits are rich source of vitamins, minerals and other nutrients,

Fruit plants are playing a vital role in providing nutritional and economical security to the poor mass in rural areas but the commercial importance and market value of these wild fruits is unknown to them. Hence the present study was made to list out the naturally growing wild fruits were collected from forest areas to identification by the indigenous community of various tribes from Western Ghats hill for food and medicine, and to conserve those plants for their future generations. A perusal of these reports suggested that the ethnomedicinal survey in Western Ghats is incomplete and traditional herbal healing knowledge of a large number of folk communities need documentation. There is no previous report in the records of ethnobotanical knowledge of wild fruits used for various ailments from rural inhabitant and tribals of Western Ghats. The present study was documented the indigenous knowledge on the utilization of wild fruits yielding species both as food and medicine by the tribal people of Western Ghats. Field study was carried out in 15 forest divisions of Tamil Nadu . Karnataka and Kerala the ethnomedicinal information was collected through interview among different tribal group and traditional healers. About the important ethnomedicinal uses of wild fruits by the tribals. A total of 59 species of wild fruits distributed in 57 genera belonging to 39 families were identified as commonly used fruits by the tribals and traditional healers for the treatment of 14 types of diseases groups and analyzed statically.

Present knowledge on local folk medicine

Ethnomedicinal knowledge has been documented from various parts of Indian sub-continent. [7,8]. In Western Ghats, ethnomedicinal value of wild fruit plants in possession of various tribal and rural folk communities for treating various diseases have been done to some extent [9, 10, 11]. A perusal of the literature reveals that several ethnobotanical studies among various tribals have been reported from the various forest areas of the Indian states

except Western Ghats, which has not yet been studied from ethnomedicinal point of view and statistical analysis.

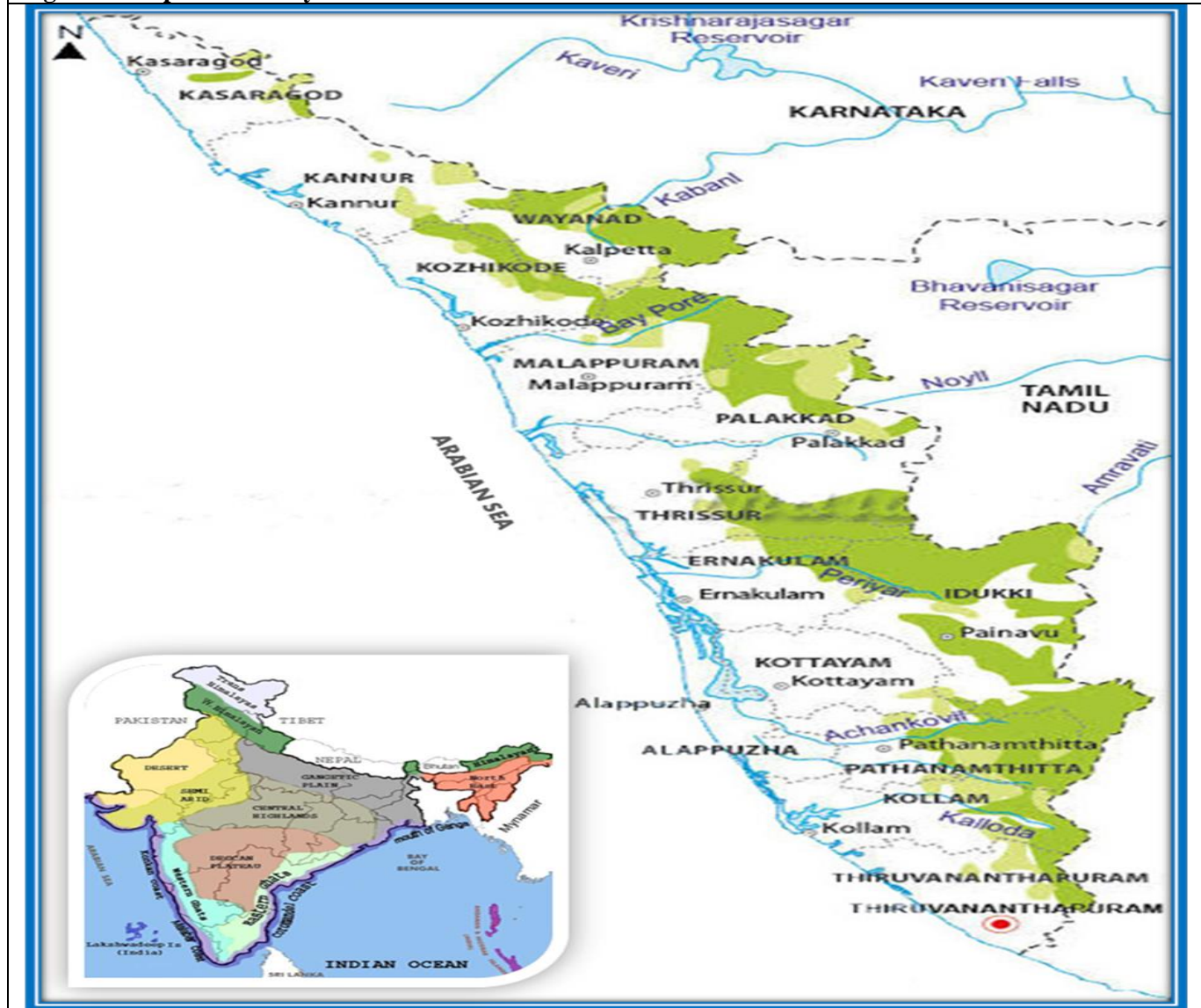
STUDY AREA

Western Ghats

India is endowed with a variety of natural resources. All along the west coast the Western Ghats are sprawling. The entire Western Ghats is known for its biodiversity, richness and endemism of different species. The Council's researchers of the Survey of Medicinal Plants Unit, Regional Research Institute of Unani Medicine, Chennai has conducted a multiday ethno-botanical survey tour programme at Southern western Ghats in various forest divisions of Tamil Nadu, Karnataka, Kerala State from 2009 to 2019 in various seasons. The ethno medicinal information of wild fruits was collected from the tribal and local peoples of the study area.

The Western Ghats is richly credited with varied kind of vegetation and unimaginable topographical features. Biogeographically, the hill chain of the Western Ghats constitutes the Malabar province of the Oriental realm, running parallel to the west coast of India from 8° N to 21° N latitudes, 73° E to 77° E longitudes, these mountains cover an area of around 140,000 km² in a 1,600 km long. Rising up from a relatively narrow strip of coast at its western border, the hills reach up to a height of 2800 m before they merge to the east with the Deccan plateau at an altitude of 500-600 m. The average width of this mountain range is about 100 km. The areas to the west of the highest elevations receive the greatest annual rainfall, 3,000 mm on average, with 80% of it falling during the period of the southwest monsoon (June-September) and the balance during the retreating north-east monsoon (October-November). This bioregion is highly species rich and under constant threat due to human pressure, and is considered one of the 18 biodiversity hot spots of the world. With its complex, heterogeneous landscapes and high levels of biodiversity, it forms an ideal ground for the testing and elaboration.

The tropical climate complimented by heavy precipitation from southwest monsoon and favorable edaphic factors create an ideal condition for the luxuriant growth of plant life, which can be seen only in few parts of the world. With its rainfall regime, the western slopes of the Ghats have a natural cover of evergreen forest, which changes to moist and then dry deciduous type as one comes to the eastern slopes. The vegetation reaches its highest development towards the southern tip in Kerala with rich tropical rain forests. Medicinal plant species of Western Ghats represent a variety of life form ranging from lichen, algae, herbs, shrubs, climber and trees, which are annuals to perennials. Moreover the wild fruits are important for people all over the Western Ghats due to their edible as well as medicinal properties. Wild fruits are ripened ovary of flowers of the plants they grow in these mountain wildly few are cultivated. The study was conducted in different forest areas of Western Ghats in Tamil Nadu, Karnataka and Kerala from 2006 to 2019 in various seasons (Fig:1).

Figure 1. Map of the Study Area of Western Ghats

METHODOLOGY

A preliminary survey of tribal villages in Western Ghats revealed that local communities used wild fruits as medicine for their healthcare extensively. Frequent field surveys were made in Western Ghats. Each area was visited twice in different seasons in 2010-2011. Ethnobotanical data (Botanical name, local name, mode of consumption and ethnobotanical uses) were collected through interviews and discussion with the tribal practitioners in and around the study area. Data were also collected through questionnaires in their local languages (Malayalam Tamil and Kanadam). Information's were collected through interview with eighty persons aged between 30-80, who had traditional knowledge of wild fruit plants. In addition to the vernacular names, questions were also asked about each plant prescribed, such as part of the fruit used, medical uses, detailed information about mode of preparation (i.e., decoction, paste, pills, powder and juice); from the usage either fresh or dried and mixtures of other plants used as ingredients were also collected. The claims were compared with available

important works on Indian ethnobotany and medicinal plants such as [12, 13,14]. The medicinal fruit plants were identified (local names), photographed and sample specimens were collected for the preparation of herbarium documentation.

The collected wild fruit plant species were identified taxonomically using the Flora of Presidency of Madras [15] and the Flora of Tamil Nadu Carnatic [16]. The identified plant specimens were then confirmed through referral tour programme with herbaria of Botanical survey of India, Coimbatore. The specimens were deposited in the herbarium of survey of medicinal plant

unit, Regional Research Institute of Unani Medicine, Chennai. The tribal information is also kept in the same institute, voucher specimens along with other details are given in **Table-1**.

Statistical Analysis (Quantitative analysis) Use Value (UV)

The relative importance of each plant species known locally to be used as herbal remedy is reported as use value (UV) and it was calculated using the following formula [17].

$$UV = \Sigma U/n$$

Where UV is the use value of a species, U is the number of use reports cited by each informant for a given plant species and n is the total number of informants interviewed for a given plant.

Factor Informant consensus (FIC)

The ICF was used to analyze the agreement degree of the informants' knowledge about each category of ailments [18, 19]. The ICF was calculated using the following formula:

$$Fic = (Nur - Nt)/(Nur - 1)$$

where **Nur** stands for the number of use reports of informants for a particular illness category, and **Nt** is the number of species used by all informants for a particular illness.

Fidelity level (FL)

The **FL** was employed to determine the most important plant species used for treating certain diseases by the local herbal practitioners and elderly people living in the study area [20, 21, 22]. The **FL** was calculated using the following formula:

$$FL (\%) = Np/N \times 100$$

where **Np** is the number of informants that mentioned the specific plant species used to treat certain ailments, and **N** is the total number of the informants who utilized the plants as medicine for treating any given ailment.

RESULT AND DISCUSSION

Western Ghats Wildlife forest has a variety of medicinal plants and wild fruits which are used by tribes and traditional healers for their primary health care. The present study identified tribal healers using 59 species of ethnomedicinal wild fruits distributed in 57 genera belonging to 39 families to treat various diseases and nutritional values also. The result of the survey presented in **table-1**, in which the wild fruit plants are arranged alphabetically by botanical names for each species. The following ethnobotanical information were provided; Botanical names, Family name, Voucher specimen numbers, Local names, mode of consuming and ethnobotanical Uses, Habit, Status of plant, Use Value (UV), Factor Informant Consensus (FIC) and Fidelity Level (FL) Values according to the information collected. The mostly used 59 wild fruits plant among the tribal's are habit wise analyzed They are trees 33speies, climbing shrub 14 species, shrub 5 species, Small trees 2 species, Herb 2 species, Creeping shrub 1 species, Woody stragglng shrub 1 species and floating herb 1 species. These are commonly occurring and medicinally important wild fruits used to treat various diseases like asthma, skin diseases, sex related problems, rheumatism, jaundice, diabetic, piles, ulcers, venereal diseases, tooth ache, bleeding gums, anemia, insect catching fly glue, hair fall, paralysis, and wound healing etc.,

In the present study statically analyzed the 59 plants species of wild fruits (Only Fruits parts of plant) used by 80 informants as ethnomedicines and the data were collected in the study area. The commonly used fruit species was *Sauropus androgynus* (L.) Merr. (Euphorbiaceae) Popularly Known as Thavasi Keerai, With highest UV of 0.90 by 72 informants it is used for Jaundice as decoction. Followed by *Toddalia asiatica* (L.) Lam. (Rutaceae) With UV of 0.88 by 70 informants which is used for chronic fever as decoction and *Solanum virginianum* L. (Solanaeae) and *Sauropus androgynus* (L.) Merr. (Euphorbiaceae) with UV of 0.85 by 68 informants which is used for asthma and jaundice as decoction. The species with lowest Use Value was observed *Careya arborea* Roxb. (Barringtoniaceae) with UV of 0.14 by 11 informants as decoction for stomach ulcers. Followed by *Acacia sinuata* (Lour.) Merrill (Mimosaceae) fruit powder externally used for dandruff with UV of 0.15 by 12 informants and *Bridelia retusa* (L.) A.Juss. (Euphorbiaceae) Fruits eaten as raw for anemia with UV of 0.15 by 12 informants was analyzed (Table:1).

In order to analyze the general usage pattern of plants, the informants consensus factor (Fic) was used to highlight the plant use in particular ailments categories and agreement with use of plants. This will helps in the selection of plants for pharmacological and phytochemical studies. Moreover the Informant consensus Factor (FIC) was analyzed with 39 Diseases divided as 14 ailments categories among them highest value was observed in Wound healing, Endocrinal disorders and Fever/Chronic Fever as Fic Value:1.00 at same the Lowest value was observed in Determetological Infection as Fic Value :0.97(**Table: 2**).

Thereafter Fidelity level (FL) is useful for identifying the most preferred species used by informants for treating certain ailments of the reported fruit species. The highest fidelity level of 100%, most of which were used in single ailments by the informants. The plant with highest Fidelity level was *Sauropus androgynus* (L.) Merr. (Euphorbiaceae) (90.00%), *Toddalia asiatica* (L.) Lam. (Rutaceae) (87.50%) and *Solanum virginianum* L. (Solanaeae) (85.00%) analyzed. At the same the lowest Fidelity level are observed in rarely used less known fruit yielding plant species, the *Acacia sinuata* (Lour.) Merrill (Mimosaceae) and *Bridelia retusa* (L.) A.Juss. (Euphorbiaceae) are (15.00%) followed by *Adenanthera pavonina* L./ Mimosaceae are (16.25%) values are observed. The same analysis were correlated and observed studied by [23]in the wild tuberous species used by tribals in koraput District of Odisha, India and [24] Medicinal and edible tubers used by tribes in Kanniyakumari district, Tamil ndu, india.

This is consistent with other general observations which have been reported earlier in relation to wild medicinal plants studies by the Indian system of medicines like Siddha, Ayurvedha and Unani [13, 25, 26]. Different types of preparation made from medicinally important plants include decoction, juice, powder, paste, oil and plant extract. Drugs are prescribed either single or in a combination of more than one plant / parts of same or

different plants to the people suffering from various diseases. In Western Ghats, the local herbal healers and elder people rich in traditional knowledge depend on the natural resources of the area. Most of them still consider traditional herbal knowledge as traditional secrets. But, through repeated contacts, and discussions, they shared their traditional herbal knowledge. The wild fruit plants play an important role in providing knowledge to the researchers in the field of ethnobotany, ethnopharmacology and nutritional studies. The observation of present study shows that traditionally used wild fruits plays a significant role in the life of tribal people.

The study of ethnomedicinal system and herbal medicinal as therapeutic agent is a paramount importance in addressing health problems of traditional communities and third world countries as well as industrialized societies. Previous reports on the ethnobotany of different states of India provide evidence for the presence of numerous ethnomedicinally used wild fruits plants used by various tribal communities [27, 28, 10]. the traditional knowledge about utilization of local plant species is vital in alternate health care system as well as for the self sustenance of

local population. High costs coupled with numerous side effects of synthetic drugs are forcing people to depend on the locally available herbal medicine and wild fruit for their health care needs.

The fruits are nature's gift to mankind. These wild fruits are chief source of vitamins, minerals and proteins. These constituents are essential for normal physiological well being and help in maintaining healthy state through development of resistant against pathogens [3, 11] studied the antinutritional factors of some wild edible fruits from Kolhapur district. [28] reported less known edible fruit - yielding plants of Nilgiris. It is known that the intake of wild fruit reduces the rate of diseases and increases the rate of resistance and ageing. Fruit plants are playing a vital role in providing nutritional and economical security to the poor mass in rural areas but the commercial importance and market value of these wild fruits is unknown to them. Hence the present study was made to list out identification of underutilized wild edible fruits used by the indigenous community of Western Ghats forest, and to conserve those plants for their future generations.

Ailments categories

1. Dermatological Infection

- a. Inflammation
- b. Skin Diseases
- c. Antiseptic
- d. Skin Rashes
- e. Skin Irritation

2. Dandruff/Hair care

- a. Hair fall
- b. Dandruff

3. Wound Healing

- a. Wound Healing

4. Sexual disorders/Geneto Urinary Ailments

- a. Increase sperm count
- b. Menstrual bleedings
- c. Urinary Irritation
- d. Sexual deplete/disorders
- e. Birth control

5. Obesity

- a. Obesity

6. Circulatory/Cardiovascular diseases

- a. Anemia
- b. Heart Diseases

7. Gastro intestinal Ailments

- a. Stomach Pain
- b. Stomach Ulcers
- c. Indigestion
- d. Constipation

- e. Intestinal Worm

- f. Dysentery

8. Edible and General Health

- a. Piles
- b. Edible food

9. Skeleton - Muscular and Nervous System Disorders

- a. Neuro-disease
- b. Paralysis
- c. Joint Pain
- d. Rheumatic Swelling
- e. Rheumatic Pain

10. Oral and Tooth Disorders

- a. Swelling Gum
- b. Toothache
- c. mouth Ulcers

11. Endocrinal disorders

- a. Diabetic
- b. Kidney stone

12. Respiratory System disorders

- a. Cough and Cold
- b. Asthma
- c. Cough

13. Liver

- a. Jaundice

14. Fever

- a. Chronic Fever

Table 1. List of wild fruit plant, Local names, Mode of consumption and Ethnobotanical Uses, Habit, Status, Use value and Fidelity Level, in Western Ghats of India

S. No	Botanical Name/Family Name/ Voucher Specimen No:	Local Name	Mode of consumption and Ethnobotanical Uses	Habit/ Life form	Status	No. of Users	Use value (UV)	Fidelity Level (FL) (%)
1	<i>Abrus precatorius</i> L./Fabaceae/ Voucher Specimen No: 8929	Kundumani	Seed paste applies externally for inflammation. Seed soaked in coconut oil to apply for hair growth, Seed jewels used for antiseptic and Skin diseases.	Climbing Shrub	Common	25	0.32	31.25
2	<i>Acacia sinuata</i> (Lour.) Merrill/ Mimosaceae / Voucher Specimen No: 11774	Shikakai	Fruit powder used for dandruff	Climbing Shrub	Common	12	0.15	15.00
3	<i>Adenantha pavonina</i> L./ Mimosaceae/ Voucher Specimen No:11068	Manjadi/ Ananikundumani	Seeds paste externally used as antiseptic, seed jewels are wearing for antiseptic.	Tree	Rare	13	0.17	16.25
4	<i>Argyreia nervosa</i> (Burm.f.) Bojer / Convolvulaceae/ Voucher Specimen No:12721	Samuthurapachi	Unripe fruits soaked in neem oil then apply for Diabetic wound	Climbing Shrub	Common	14	0.18	17.50
5	<i>Averrhoa carambola</i> L./ Euphorbiaceae/ Voucher Specimen No:9963	Erumpuli	Fruit extract 20 ml orally given with honey to reduce obesity.	Tree	Rare	18	0.23	22.50
6	<i>Bombax ceiba</i> L./ Bombacaceae / Voucher Specimen No: 9755	Elavam	10g Unripe young fruit powder orally given daily with hot water for increase sperm counting.	Tree	Rare	20	0.25	25.00
7	<i>Bridelia retusa</i> (L.) A.Juss./ Euphorbiaceae/ Voucher Specimen No:9731	Mullu-vangai	Fruits eaten as raw for anemia.	Tree raw	Rare	12	0.15	15.00
8	<i>Caesalpinia crista</i> (L.) Roxb./ Caesalpinaceae / Voucher Specimen No: 12524	Kachakai	Seed pastes with neem oil externally apply for skin rashes. Seed kernel 10 g orally given with hot water for stomach pain.	Climbing Shrub	Common	14	0.18	17.50
9	<i>Cardiospermum canescens</i> L./ Sapindaceae/ Voucher Specimen No: 8878	Kattu mudakathan	Seed soaked in coconut oil and used for dandruff and hair fall.	Climbing Shrub	Rare	25	0.32	31.25
10	<i>Calophyllum inophyllum</i> L. / Clusiaceae/ Voucher Specimen No:9016	Punnai Maram	Oil is externally used for ring worm, Seeds made in to jewel and wear as chain for skin diseases.	Tree	Rare	21	0.27	26.25

11	<i>Capparis zeylanica</i> L. / Capparaceae Voucher Specimen No:12321	Aatondai	Fruit used as pickle, eaten as raw also. Fruit juice 20ml orally given for reduces over menstrual bleeding.	Climbing Shrub	Common	19	0.24	23.75
12	<i>Careya arborea</i> Roxb. / Barring toniaceae/Voucher Specimen No: 9984	Pelamaram	10g Fruit powder made into 100ml decoction orally given for Stomach ulcers.	Tree	Rare	11	0.14	13.75
13	<i>Carissa carandas</i> L./Apocynaceae/ Voucher Specimen No:10089	Kilakai	Fruit used as pickle for indigestion, 20-50ml fruit juice orally given to urinary irritation.	Shrub	Common	24	0.30	30.00
14	<i>Cassia fistula</i> L./ Caesalpiniaceae / Voucher Specimen No:8923	Kondrai	Fruit yielding dark gum apply externally on sex organs for venereal diseases.	Tree	Common	26	0.33	32.50
15	<i>Catunaregam spinosa</i> (Thunb.) Tirveng. / Rubiaceae/ Voucher Specimen No: 12504	Karai	Fruit paste apply externally for prevent Leach bite in forest	Tree	Common	48	0.60	60.00
16	<i>Celastrus paniculatus</i> L. /Celastraceae/ Voucher Specimen No: 12242	Malkangani	Fruit juice 100ml daily orally given for nervous weakness. Seed soaked in coconut oil to apply externally as massage for paralysis.	Climbing Shrub	Rare	54	0.68	67.50
17	<i>Cipadessa baccifera</i> (Roth) Mig./Meliaceae/ Voucher Specimen No:11356	Pulipanchedi	Fruit juice used as gargle for bleeding and swelling gum.	Shrub	Common	34	0.43	42.50
18	<i>Cordia dichotoma</i> G.Forsk. / Boraginaceae/Voucher Specimen No:12645	Naruvari	Fruit juice 30-50ml orally given for constipation Fruit pastes apply externally for skin irritation.	Tree	Rare	28	0.35	35.00
19	<i>Citrullus colocynthis</i> (L.) Schard./Cucurbitaceae/ Voucher Specimen No:12314	Athuthumati	Fresh fruit paste apply externally for joint pain Dried fruit powder 10g orally given with hot water for Diabetic.	Creeping Shrub	Common	32	0.40	40.00
20	<i>Crescentia cujete</i> L./ Bignoniaceae/ Voucher Specimen No:10943	Thiruvodu maram (Beggars bowl)	Fruit pod smoke inhaled for Asthma. Pod powder apply externally with neem oil for skin diseases.	Tree	Endangere d	34	0.43	42.50
21	<i>Croton tiglium</i> L./ Euphorbiaceae/ Voucher Specimen No:11293	NeerVELam	Fruit pastes externally apply for swellings and skin diseases. Fruit soaked in coconut oil externally apply for Paralysis.	Small tree	Rare	55	0.69	68.75
22	<i>Elaeagnus kologa</i> Schltdl. / Elaeagnaceae/ Voucher Specimen No:11493	Kattumunthiringa	Fruit eaten as raw for sexual disorders.	Woody stragglng shrub	Rare	51	0.64	63.75

23	<i>Debregeasia longifolia</i> (Burm.f.) Wedd./ Urticaceae/ Voucher Specimen No:9606	Cakavatitam/ Kattu nochhi	Fruit juice 100ml orally given for stomach ulcers.	Shrub	Rare	48	0.60	60.00
24	<i>Diospyros malabarica</i> (Desr.)Kostel. / Ebenaceae/ Voucher Specimen No:11216	Tumbika	50 ml Fruit juice orally given for reduce fever and chronic dysentery.	Tree	Rare	46	0.58	57.50
25	<i>Embelia ribes</i> Burm.f./ Primulaceae/ Voucher Specimen No:10173	Vayi Vilangai	100 ml Fruits decoction given for stomach problems and intestinal worms	Shrub	Rare	38	0.48	47.50
26	<i>Entada scandens Benth.</i> / Fabaceae/ Voucher Specimen No:11460	Kurinjikai	20g Seed powder orally given with milk for sexual disorders.	Climbing Shrub	Rare	42	0.53	52.50
27	<i>Fagraea ceilanica</i> Thunb. / Gentianaceae/ Voucher Specimen No:11863	Marutankaimaram	Fruit paste uses as fly glue to control diseases transmitting fly/insect repellent.	Tree	Rare	32	0.40	40.00
28	<i>Garcinia gummi-gutta</i> (L.) Robs./Clusiaceae/ Voucher Specimen No:11154	Kodampuli	Fruit used as pickle and 10-20 ml of juice orally given for obesity.	Tree	Common	62	0.78	75.00
29	<i>Helicterus isora</i> L. / Sterculiaceae/ Voucher Specimen No:12288	Valampuri edampuri	Fruit soaked in coconut oil and apply hair for reduce hair fall.	Tree	Common	65	0.82	81.25
30	<i>Hugonia mystax</i> L./ Lianaceae/ Voucher Specimen No:10133	Mothira kanni	Unripe fruit paste apply externally for rheumatism swelling, Ripe fruit used as edible for stomach Ulcer.	Climbing Shrub	Common	47	0.59	58.75
31	<i>Hydnocarpus wightiana</i> Blume./Flacourtiaceae/ Voucher Specimen No:11308	Maravetti	Fruit pastes apply externally for muscular pain and rheumatic pain.	Tree	Rare	50	0.63	62.50
32	<i>Mallotus philipensis</i> Mul.Arg. / Euphorbiaceae/ Voucher Specimen No:10004	Senthuram	Fruit paste apply externally for Skin diseases.	Tree	Common	58	0.73	72.50
33	<i>Mimusops elengi</i> L./Sapotaceae/ Voucher Specimen No:10926	Magilam	Unripe fruit chewed for bleeding gum and teeth ache.	Tree	Common	52	0.32	65.00
34	<i>Mucuna atropurpurea</i> DC. /Fabaceae/ Voucher Specimen No:10283	Kattu punaikali	10g Seed powder orally given for improve semen counting and sexual disorders.	Climbing Shrub	Rare	53	0.67	66.25
35	<i>Mucuna pruriens</i> (L.) DC. / Fabaceae/ Voucher Specimen No:12194	Punaikali	10g Seed powder orally given for improve nervous weakness and sexual disorders.	Climbing Shrub	Rare	60	0.75	75.00
36	<i>Myristica dactyloides</i> Gaertn./ Myristicaceae/ Voucher Specimen	Kattujathikai	Fruit bulb used as pickle for indigestion. 10 g Seed powder orally given for cough	Tree	Rare	48	0.40	60.00

	No: 9954		and cold.					
37	<i>Oroxylum indicum</i> (L.)Vent./ Bignoniaceae/ Voucher Specimen No:11276	Palagapaimani	100ml fruit decoction orally given for mouth ulcers.	Tree	Endangere d	46	0.58	57.50
38	<i>Pedaliium murex</i> L./ Pedaliaceae/ Voucher Specimen No: 9761	Annainerunjil	100 ml fruit decoction orally given for kidney stone.	Herb	Common	68	0.85	85.00
39	<i>Persea macrantha</i> (Ness) Kosterm. / Lauraceae/Voucher Specimen No:9669	Kolamavu	Fruit smoke inhaled for relief Asthma pain. Fruit paste apply externally for Rheumatic pain	Tree	Rare	48	0.40	60.00
40	<i>Phoenix sylvestris</i> (L.) Roxb./ Arecaceae/ Voucher Specimen No: 9331	Eichai	100 ml decoction of mature fruit powder orally given for Jest pain and heart related diseases.	Tree	Rare	51	0.64	63.75
41	<i>Pterospermum canescens</i> Roxb. / Sterculiaceae/ Voucher Specimen No:10289	Vennangu	Fruit pastes with neem oil externally apply for Skin rashes.	Tree	Rare	44	0.55	55.00
42	<i>Radermachera xylocarpa</i> (Roxb.) K. Schum. / Bignoniaceae / Voucher Specimen No:9139	Vedanguruni	100ml fruit decoction orally given for birth control.	Tree	Rare	52	0.65	65.00
43	<i>Rhodomyrtus tomentosa</i> Wight./ Myrtaceae / Voucher Specimen No:11980	Koratta	Fruit edible, 100ml Fruit juice orally given daily for Bleeding piles.	Tree	Rare	56	0.70	70.00
44	<i>Rubia cordifolia</i> L./ Rubiaceae/ Voucher Specimen No:10241	Manjati	50-100 ml Fruit decoction orally given for Anemic and general weakness .	Climbing Shrub	Rare	43	0.60	53.75
45	<i>Rubus ellipticus</i> Smith./Rosaceae/ Voucher Specimen No:12358	Mullipallam	100 ml Fruit juice orally given for cough and sour throat	Climbing Shrub	Rare	50	0.63	62.50
46	<i>Sapindus emarginatus</i> Vahl. /Sapindaceae / Voucher Specimen No:12093	Puvathi	Seed coat smoke inhaled for Asthma	Tree	Common	66	0.83	82.50
47	<i>Sauropus androgynus</i> (L.) Merr. /Euphorbiaceae/ Voucher Specimen No:10285	Madurachera/ Thavasi Keerai	100 ml – 150ml Fruit decoction orally given daily for Jaundice.	Shrub	Rare	72	0.90	90.00
48	<i>Solanum virginianum</i> L./ Solanaceae / Voucher Specimen No: 12341		100 ml Fruit decoction orally given for Asthma Seed Smoke inhaled in mouth for Teeth ache.	Herb	Common	68	0.85	85.00
49	<i>Soymida febrifuga</i> (Roxb.) Juss. /Meliaceae/ Voucher Specimen No:9148	Sittathi	Fruit paste applies externally for rheumatic pain.	Tree	Rare	52	0.65	65.00

50	<i>Sterculia guttata</i> Roxb./ Sterculiaceae/ Voucher Specimen No:10409	Kavalam	Seed oil externally apply for inflammation and, Rheumatic pain.	Tree	Rare	48	0.60	60.00
51	<i>Stereospermum chelonoides</i> (L.fil.) DC. / Bignoniaceae/ Voucher Specimen No:10378	Pathiri	Fruit powder made into smoke and inhaled for asthma.	Tree	Rare	52	0.65	65.00
52	<i>Strychnos nux-vomica</i> L./ Loganiaceae / Voucher Specimen No: 12205	Eatti	5 g Seed powder mixed with 100 ml hot water orally given for jaundice	Tree	Rare	54	0.68	67.50
53	<i>Syzygium jambos</i> (L.) Alston- / Myrtaceae/ Voucher Specimen No:10157	Jambou	Fruit eaten as raw for anemia	Tree	Rare	48	0.60	60.00
54	<i>Tamilnadia uliginosa</i> (Retz.)Tir&Sas. / Rubiaceae/ Voucher Specimen No:10186	Malankara	Fruit pastes apply externally on mouth for mouth ulcers.	Small Tree	Rare	46	0.58	57.50
55	<i>Terminalia bellirica</i> (Gaertn.) Roxb./ Combretaceae / Voucher Specimen No: 12224	Thandri	Seed paste with neem oil apply externally for sexual diseases.	Tree	Rare	52	0.65	65.00
56	<i>Terminalia chebula</i> Retz./ Combretaceae / Voucher Specimen No: 9083	Kadukai	100 ml Seed decoction orally given for stomach ulcers and constipation.	Tree	Rare	48	0.60	60.00
57	<i>Toddalia asiatica</i> (L.) Lam. / Rutaceae/ Voucher Specimen No:9844	Milagarani	100 ml Fruit decoction orally given daily for chronic fever.	Climbing shrub	Common	70	0.88	87.50
58	<i>Trapa natan</i> L. / Trapaceae/ Voucher Specimen No:8861	Sii	Fruit powder orally given with hot water for Sexual debility	Floating herb	Rare	56	0.70	70.00
59	<i>Trema orientalis</i> (L.) Bl./ <i>Canabinaceae</i> / Voucher Specimen No:9849	Payimunai	100 ml fruit decoction orally given daily for jaundice.	Tree	Endangere d	58	0.73	72.50

Table: 2. Informant Consensus Factor (FIC)

S. No.	Aliments Category	No. of uses report	No. of Species used	Informant Constant Factor
1	Dermatological Infection	262	8	0.97
2	Dandruff / Hair fall	102	3	0.98
3	Wound healing	14	1	1.00
4	Sexual disorders / Genitourinary ailments	483	12	0.98
5	Obesity	80	2	0.99
6	Circulatory/Cardio vascular disease	63	2	0.98
7	Gastro intestinal ailments	324	9	0.98
8	Edible / General health	155	4	0.98
9	Skeleton-muscular and Neuro system disorders	413	9	0.98
10	Oral and teeth disorders	200	4	0.98
11	Endocrinal disorders	100	1	1.00
12	Respiratory system disorders	414	8	0.98
13	Liver/Jaundice	184	3	0.99
14	Fever/Chronic Fever	70	1	1.00

CONCLUSION

From the past, edible wild fruits have played a very vital part in supplementing the diet of the people. The dependence on these fruits has gradually decline as more exotic fruits have been introduced. But many people in tribal areas still use them as a supplement of their basic need of food. Some of them are preserved for use in dry period or sold in rural market. But the popularity of these wild forms has recently decreased. Apart from their traditional use of food, potentially they have many advantages. They are edible and having nutritional food value, which provides the minerals like sodium, potassium, magnesium, iron, calcium, phosphorus etc. They are immune to many diseases and often used in different formulation of Indian system of medicine and Indian Folk-medicine. They provide fibres which prevent constipation. It is consider that special attention should be paid in order to maintain and improve this important of food supply. In order to remedy, a wider and sustained acceptance of wild fruits as important dietary components must be stimulated.

This present study revealed that traditional knowledge on the use of wild fruits is still practiced by the

tribal people of Western Ghats of Tamil Nadu, Karnataka and Kerala. The Wild fruits with highest fidelity level and use value in the present study may indicate the possible occurrence of valuable phytochemical compounds and it requires a search for potential new drugs to treat various ailments.

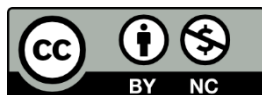
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