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Documentation of Fruit Yielding Trees in Hiriyur of Chitradurga district

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Abstract

The study on documentation of fruit yielding trees in Hiriyur of Chitradurga district was carried out during January to December 2022. A total 22 species of fruits utilized by local communities were documented as cultivated or planted in their home gardens of this surveyed region. These species are belonging to 17 genera and 13 families respectively. The most cultivated fruit were found to be *Citrus, Punica, Psidium*, and *Annona* followed by *Achras*, *Mangifera* and Musa species. The dominant genus was represented by *Citru*s followed by *Annona* and *Ficus*. Though not extensively but *Emblica, Carica* and *Tamarindus* here for the sustenance of the livelihood. The reported fruit plants are very nutritious vitamins, proteins, polypeptides and flavonoids. Therefore, sustainable management of these resources for the well being of the local communities as well as to conserve biodiversity is needed.

Key words : Documentation, Fruits, Trees, Hiriyur.

The people of the Hiriyur region are mostly dependent on the traditional farming. This area is endowed with unique physiographic and enormous plant genetic resources and diversity because of the wide variation in climate and ecological diversity. It is considered to be native of many leafy green vegetables and fruits which remain under utilized and even if unexplored. Uses of edible plants and locally available vegetable have played an important role in human life. These wild, green, leafy vegetables and fruits play a vital contribution to the diet in the life of rural people as they are a rich source of various nutritive macro and micro elements including pro-vitamin which can compensate for the dietary deficiencies of vitamins and minerals for human diet. Moreover, their consumption gives diversity to daily food intake, adding flavors to the diet[1]. The phyto-chemicals in vegetable also protect human beings from various ailments, as a result vegetable are considered as protective food[9].

Due to various natural and anthropogenic reasons natural resources of wild vegetables, fruits and their habitats are depleting rapidly[2]. So, cultivation of these fruits will not only provide balanced nutrition, food security, health security but also helps to reduce poverty alleviation through the sale of the surplus of

these vegetables and fruits Which ultimately serves as an alternative to the usual agriculture crops. Several researchers have carried out investigations on various uses and traditional knowledge of plants[4,6,8,10,12].

Due to the paucity of sufficient information of these fruits, an attempt has been made to enlist the available fruit plants mostly used by local communities to assess their potential in the nutritional security point of view in Hiriyur in the present study. Discussions were held with the elders of the local regarding the use of the plant parts.. Identification of the plants was done with the help of the local people and the unidentified plants were identified from the local floras.

The study was carried out in Hiriyur of Chitradurga district during the period January to December 2022. Hiriyur is a taluk headquarter in Chitradurga district in the state of Karnataka, India. Hiriyur is located at 13.9452° N, 76.6140° E. It has an average elevation of 585 meters (1919 ft). The soil is chiefly composed of sandstone and Black. The study site has a temperature climate with wet summers caused by monsoon rains. On an average, the average annual precipitation is 50cm. Data was collected through a combination of tools and technique of questionnaire, PRA techniques. The information thus gathered was compared with available literature sources as cited by Dey *et al*.[3].

A total 22 species of fruits utilized by local communities were documented from the surveyed region. These species are belonging to 17 genera and 13 families, are presented in Table-1. Mekonnen *et. al*.[7] also reported 69

Figure 1. Study area map showing Hiriyur

Table-1. Documented fruit trees utilized and their values/uses

Sl. No	Local Name	Scientific Name	Family	Plant type (Herb, Shrub, Tree)	Source of Seeds/ Plants	Season of Fruiting	Associated Traditional Knowledge
1	Chikku	*Achras sapota* L.	Sapotaceae	Tree	plants	Nov-Dec	It acts as antimicrobial, anti-inflammatory, antipyretic, antiviral, antidiarrheal, antihyperglycemic.
2	Cashew	*Anacardium occidentale* L.	Anacardiaceae	Tree	Seeds	Nov-March	Used against Asthama, Anti-inflammatory, analegesis, Antidiabitic, Gastrointestinal diseases, including diarrhea,warts, coughs and wonds
3	Pineapple	*Ananas comosus* L. Merr.	Bromeliaceae	Herb	Seeds	Any time	It acts as anti-inflammatory, antioxidant activity, monitoring nervous system function, and healing bowel movement.
4	Ramphala	*Annona reticulata* L.	Annonaceae	Tree	Seeds, plant	April-Jun	It possesses several medicinal properties such as anthelmintic, analgesic, anti-inflammatory, antipyretic, wound healing and cytotoxic effects.
5	Seethaphala	*Annona squamosa* L.	Annonaceae	Tree	Seeds, plant	all	Used for treating cardiac ailments, thyroid-related disorders, diabetes, and cancer
6	Jack fruit	*Artocarpus heterophyllus* Lam.	Moraceae	Tree	Plants	March - May	It shows anticarcinogenic, antimicrobial, antifungal, anti-inflammatory, wound healing, and hypoglycemic effects.
7	Papaya	*Carica papaya* L.	Caricaceae	Tree	Plants	Oct- Jan	Used as anti-inflammatory, antioxidant, diuretic, antibacterial, abortifacient. It relieve menstrual pain, improve ingestion, wound healing, and heart disease.
8	Chakotha	*Citrus decumana* L.	Rutaceae	Tree	Seeds	Apr-Jun	It has analgesic, anti-inflammatory, antioxidant, anthelmintic, antibacterial, antifungal, and hypolipidemic properties.

9	Lemon	*Citrus limon* (L.) Burm.f.	Rutaceae	Shrub	Plant	Aug-Oct	Used for treatment of high blood pressure, the common cold, and irregular menstruation, remedy for coughs
10	Chakkotha	*Citrus maxima* (Burn.) Merr	Rutaceae	Tree	Wild	July –Sept.	Used for ulcers, febrifuge, dyspepsia, lumbago, fever, cardiotonic, gastrointestinal disorders, diabetes, and cardiovascular disease
11	Orange	*Citrus sinensis* L.	Rutaceae	Tree	form	April-Jun	Used to treat constipate ion, cramps, colic, diarrhea, bronchitis, tuberculosis, cough, cold, obesity, menstrual disorder, angina, hypertension, anxiety, depression and stress
12	Watermelon	*Cucumis metuliferus* E. Mey	Cucurbitaceae	Climber	seeds	Jan-Feb	Used for treatment of parasitic infections, acts as a antioxidant, antimicrobial, antifungal, antimicrobial, antiviral, antihypertensive, antidiabetic.
13	Bettada Nelli	*Emblica officinalis* Gaertn.	Euphorbiaceae/ Phyllanthaceae	Tree	Seeds,\ areal part	Jun-Sep	Used for rheumatic pains, gonorrhea, asthma, hemorrhage, jaundice, dyspepsia, nausea, constipation, diarrhea, eye disease, brain health, intestinal ailments, diabetes mellitus, coronary heart diseases.
14	Fig	*Ficus carica* L.	Moraceae	Tree	Plant	Aug-Oct	Used for gastrointestinal, respiratory, inflammatory, and cardiovascular disorders, treatment of anemia, cancer, diabetes, leprosy, liver diseases, paralysis and ulcers
15	Fig	*Ficus racemosa* L.	Moraceae	Tree	plants	Nov-Dec	Used against diabetes, liver disorders, diarrhea, inflammatory conditions, hemorrhoids, respiratory, and urinary diseases. Used as astringent, carminative, vermifuge and anti-dysentery.
16	Mango	*Mangifera indica* L.	Anacardiaceae	Tree	Seeds	April-May	Used as a dentrifrice, antiseptic, astringent, diaphoretic, stomachic, vermifuge, tonic, laxative and diuretic and to treat diarrhea, dysentery, anaemia, asthma, bronchitis, cough,

							hypertension, insomnia, rheumatism, toothache, leucorrhoea, haemorrhage and piles.
17	Banana	*Musa paradisiaca* L.	Musaceae	Herb	Seeds, plant	April-Jun	Used in the treatment of dysentery and diarrhea and also for the treatment of malignant ulcers used to treat ulcers, dysentery, and bronchitis and cooked flowers are good food for diabetics it has antioxidant, antimicrobial, anticancer, antidiabetic, and antiulcerogenic properties.
18	Nelli	*Phyllanthus acidus* (L.) Skeels	Euphorbiaceae/ Phyllantha-ceae	Tree	Seeds, plant	all	Used to treat inflammatory, rheumatism, bronchitis, asthma, respiratory disorder, hepatic diseases and diabetes.
19	Guava	*Psidium guajava* L.	Myrtaceae	Tree	Plants	Any time	Used to treat certain respiratory and gastroin-testinal disorders, and to increase platelets, diarrhoea, dysentery, stomach aches, and indigestion
20	Pomegranate	*Punica granatum* L.	Punicaceae	Tree	Plants	Oct- Jan	Used for generations in treating ulcers, diarrhea, and male infertility. Treatment of kidney stones, painful urination, diarrhea, dysentery, anemia, hemorrhoids, cancer, skin cancer, osteoarthrit.
21	Jamun	*Syzygium cumini* (L.) Skeels	Myrtaceae	Tree	Seeds	Apr-Jun	Used for the treatment of sore throat, bronchitis, asthma, thirst, biliousness, dysentery and ulcers, antibacterial, antioxidant, anti-inflammatory, antimicrobial.
22	Tamarind	*Tamarindus indica* L.	Caesalpin-iaceae	Tree	Plant	Dec-March	Used traditionally in abdominal pain, diarrhea and dysentery, helminthes infections, wound healing, malaria and fever, constipation, wound healing, abdominal pain, diarrhea, dysentery, parasitic infestation, fever, malaria and respiratory disorders.

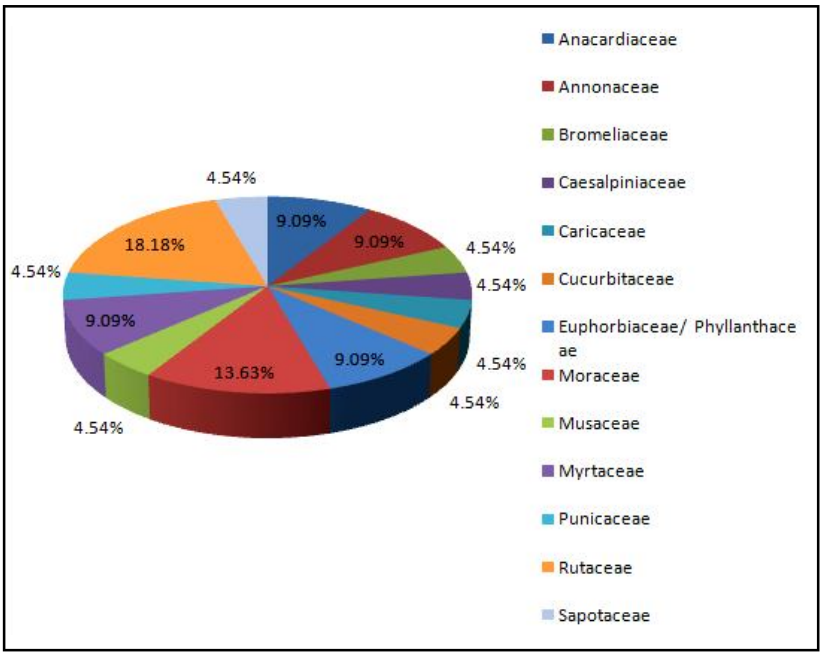

Figure 2. Family wise percentage distribution of fruit yielding trees in Hiriyur

species belonging to 40 families from home gardens of Ethiopia. The number of reported species is less as only fruits into account. Rutacea with four species was the dominant family among utilized fruit species. The most cultivated fruit were found to be Citrus, Punica, Psidium, and Annona followed by Achras, Mangifera and Musa. The dominant genus was represented by Citrus followed by Annona and Carica. Though not extensively but Emblica, Ficus and Tamarindus here for the sustenance of the livelihood. The reported fruit plants are very nutrients having contents like vitamins, minerals, proteins, polypeptides, flavonoids. Wild fruits may be of great importance as they remain the cheapest source of protein, vitamins, minerals, essential amino acids, bioactive compounds and also as source of dietary supplements or functional foods of many people[5,11].

Table-2. Family wise Distribution of Fruit plants in Hiriyur

Sl. No	Family	Num-ber of plants	%
1	Anacardiaceae	**2**	**9.09**
2	*Annonaceae*	**2**	**9.09**
3	*Bromeliaceae*	**1**	**4.54**
4	*Caesalpiniaceae*	**1**	**4.54**
5	*Caricaceae*	**1**	**4.54**
6	*Cucurbitaceae*	**1**	**4.54**
7	*Euphorbiaceae/ Phyllanthaceae*	**2**	**9.09**
8	*Moraceae*	**3**	**13.63**
9	*Musaceae*	**1**	**4.54**
10	*Myrtaceae*	**2**	**9.09**
11	*Punicaceae*	**1**	**4.54**
12	*Rutaceae*	**4**	**18.18**
13	*Sapotaceae*	**1**	**4.54**

Overall, the people of Hiriyur, have rich Knowledge on use of edible plants species which provide seasonal, staple and Nutraceuticals foods. It shows that fruit use is influenced by traditional knowledge, culture, and socio-economic conditions. Several vegetables and fruits can benefit local people not only as food, but also with their medicinal properties. Therefore, sustainable management of these resources for the wellbeing of the local communities as well as to conservation biodiversity is needed as well as to preserve cultural.

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