

# Documentation of Fruit Yielding Trees in Shivamogga District, Karnataka

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## Abstract

The study was carried out in Shivamogga district. 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. The dominant genus was represented by Citrus 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.

**Keywords:** Documentation, Fruits, Trees Shivamogga

## INTRODUCTION

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 (Asfaw1997). The phyto-chemicals in vegetable also protect human beings from various ailments, as a result vegetable are considered as protective food (Rai et al. 2004). Due to various natural and anthropogenic reasons natural resources of wild vegetables, fruits and their habitats are depleting rapidly (Bhogaonkaretal.2010). 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. Due to the paucity of sufficient information of these fruits, an attempt has been made to enlist the available fruit plants to assess their potential in the nutritional security point of view in Shivamogga in the present study. The nutritive value of the plants was referred from secondary literature including different articles and websites. Identification of the plants was done with the help of the local people and the unidentified plants were identified from the local floras.

## Materials and methods

The study was carried out in Shivamogga district in the state of Karnataka, India. Shivamogga

(Shimoga) district in Karnataka, India, is situated roughly between 13°27' to 14°39' North Latitude and 74°38' to 76°04' East Longitude, with the city itself near 13.92° N, 75.57° E, at an average altitude of about 640 meters above sea level, placing it in the central Malnad region.

On an average, the average annual precipitation is 700 mm to over 1800 mm annually. 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. (2007).

**Results and Discussion**

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.(2014) also reported 69 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 (Lyimoetal.2003; Sanchez-Mataetal.2011). Overall, the people of Shivamogga, 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.

**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   | Sapotaceae | Tree                           | plants                 | Nov-Dec            | It acts as antimicrobial, anti-inflammatory, antipyretic, antiviral, antidiarrheal, antihyperglycemic. |

|   |             |                          |               |      |              |             |   |
|---|-------------|--------------------------|---------------|------|--------------|-------------|---|
| 2 | Cashew      | Anacardium occidentale   | Anacardiaceae | Tree | Seeds        | Nov-March   | Used against Asthama, Anti-inflammatory, analgesis, Antidiabetic, Gastrointestinal diseases, including diarrhea, warts, coughs and wonds        |
| 3 | Pineapple   | Ananas comosus           | Bromeliaceae  | Herb | Seeds        | Any time    | It acts as anti-inflammatory, antioxidant activity, monitoring nervous system function, and healing bowel movement.                             |
| 4 | Ramphala    | Annona reticulata        | 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          | Annonaceae    | Tree | Seeds, plant | all         | Used for treating cardiac ailments, thyroid-related disorders, diabetes, and cancer   |
| 6 | Jack fruit  | Artocarpus heterophyllus | Moraceae      | Tree | Plants       | March - May | It shows anticarcinogenic, antimicrobial, antifungal, anti-inflammatory, wound healing, and hypoglycemic  |

|    |           |                 |            |       |        |              |   |
|----|-----------|-----------------|------------|-------|--------|--------------|---|
|    |           |                 |            |       |        |              | effects.  |
| 7  | Papaya    | Carica papaya   | 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 decumara | Rutaceae   | Tree  | Seeds  | Apr-Jun      | It has analgesic, anti-inflammatory, antioxidant, anthelmintic, antibacterial, antifungal, and hypolipidemic properties.  |
| 9  | Lemon     | Citrus limon    | 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   | Rutaceae   | Tree  | Wild   | July – Sept. | Used for ulcers, febrifuge, dyspepsia, lumbago, fever, cardiogenic, gastrointestinal disorders, diabetes, and cardiovascular disease                            |
| 11 | Orange    | Citrus sinensis | Rutaceae   | Tree  | form   | April-Jun    | Used to treat constipation, cramps, colic,  |

|        |              |                     |                                  |         |                    |         |   |
|--------|--------------|---------------------|----------------------------------|---------|--------------------|---------|---|
|        |              |                     |                                  |         |                    |         | diarrhea, bronchitis, tuberculosis, cough, cold, obesity, menstrual disorder, angina, hypertension, anxiety, depression and stress  |
| 1<br>2 | Watermelon   | Cucumis metuliferus | Cucurbitaceae                    | Climber | seeds              | Jan-Feb | Used for treatment of parasitic infections, acts as a antioxidant, antimicrobial, antifungal, antimicrobial, antiviral, antihypertensive, antidiabetic.   |
| 1<br>3 | Bettad Nelli | Emblica officinalis | Euphorbiaceae/<br>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. |
| 1<br>4 | Fig          | Ficus carica        | Moraceae                         | Tree    | Plant              | Aug-Oct | Used for gastrointestinal, respiratory, inflammatory, and cardiovascular disorders, treatment of  |

|        |        |                  |               |      |                 |               |  |
|--------|--------|------------------|---------------|------|-----------------|---------------|--|
|        |        |                  |               |      |                 |               | anemia, cancer, diabetes, leprosy, liver diseases, paralysis and ulcers  |
| 1<br>5 | Fig    | Ficus racemosa   | Moraceae      | Tree | plants          | Nov-<br>Dec   | Used against diabetes, liver disorders, diarrhea, inflammatory conditions, hemorrhoids, respiratory, and urinary diseases. Used as astringent, carminative, vermifuge and anti-dysentery.  |
| 1<br>6 | Mango  | Mangifera indica | Anacardiaceae | Tree | Seeds           | April-<br>May | Used as a dentrifice, 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. |
| 1<br>7 | Banana | Musa paradisiaca | Musaceae      | Herb | Seeds,<br>plant | April-<br>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 | Euphorbiaceae/<br>Phyllanthaceae | Tree | Seeds,<br>plant | all      | Used to treat inflammatory, rheumatism, bronchitis, asthma, respiratory disorder, hepatic diseases and diabetes.  |
| 19 | Guava       | Psidium guajava    | Myrtaceae                        | Tree | Plants          | Any time | Used to treat certain respiratory and gastrointestinal disorders, and to increase platelets, diarrhea, dysentery, stomach aches, and indigestion  |
| 20 | Pomegranate | Punica granatum    | 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, osteoarthritis.  |
| 2<br>1 | Jamun    | Syzygium cumini   | Myrtaceae       | Tree | Seeds | Apr-Jun   | Used for the treatment of sore throat, bronchitis, asthma, thirst, biliousness, dysentery and ulcers, antibacterial, antioxidant, anti-inflammatory, antimicrobial.   |
| 2<br>2 | Tamarind | Tamarindus indica | Caesalpiniaceae | 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. |

**TABLE-2: FAMILY DISTRIBUTION OF PLANTS IN TREATMENT**

| Sl. No | Family        | Number of plants | Percentage |
|--------|---------------|------------------|------------|
| 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%  |

### Conclusion

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. 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.

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