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ANALYSIS

Conservation of wild and cultivated fruits resources of Bangalore urban

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ABSTRACT

Since beginning of life, plants have been playing a significant role in every activities of an individual to fulfil the basic necessities of life. An increasing population in poor and under - developed countries were mainly dependent on available food resources to fulfil their regular food requirements. In the diet varieties of fruits were obtained from wild and cultivated resources used since prehistoric civilisation of humans which are being contributing basic nutrients to each and every individual to lead healthy life. The present younger generations of urban populace were highly concentrated towards the traditional low calorie food to prevent stress related disorders, instead of depending on Western instant food. The complete literary and field studies have been carried out in the field of wild and cultivated fruits used as raw/boiled to battle against malnutrition observed in the young and old generation of urban populace of Bangalore. This concept serves the purpose of sustainable use of wild and cultivated fruits for proper dietary requirements of young and age old individuals of the city by adding new wild edible nutrient fruit resources, which are natural, safe and chemical free to the traditional recipes in regular family diet for the benefit of urban society. The study deals with 50 fruit yielding plants are can be grown in the kitchen and public gardens, amusement parks and barren lands adopting modern techniques. It also conserves soil erosion, checks pollution and add crown to the city as a Garden city of Bangalore. The present research work gives massive information on wild and cultivated fruits resource plants of Bangalore urban. This is an attempt of enlisting of 51 wild and cultivated fruits resources plant species belonging to 38 genera of 27 families were conventionally utilised as wild and cultivated fruits as basic food sources for the benefit of present and future generations of urban populace of Bangalore.

Keywords: Conservation, Wild, Cultivated, Fruit, Bangalore

1. INTRODUCTION

Mother nature provided the inestimable, diversity of plants for the benefit of human beings to meet their prerequisitions in the form of food, shelter and medicine. Food plays an important role for the beginning of every individual for the increased world population. Drastic loss due to draught and other natural calamities to economically important agricultural crops such as cereals, pulses, vegetables and fruits creates pressures to wild and cultivated fruits resources plants as an additional food required for the accomplishment of hunger in poor populace of under developed countries. The native wild and cultivated fruits resource plant species attracted urban people to understand more about the occurrence, distribution, importance and utilisation to combat food crisis. Some Wild and cultivated fruit resources were identified from wild, cultivated and wild/cultivated habits, which can be traced out by following traditional knowledge to acquires new methodology of food preparation procedure to widen the family diet for the proper nourishment. Inherent wild and cultivated edible fruit plants offer wide range of food resources to the ancient and modern rural and urban populace to have healthy diet in day to day life. However, Bangalore urban area is more pleasant for moderate climate, which favours the distribution of various ornamental, wild and cultivated fruits resource plant species are observed in historical public parks, gardens, avenues, temples, markets, terrace and kitchen gardens.

Study area

Bangalore city is considered as the third largest city in India located in southern India on the Deccan Plateau. The study area found between 12.97°N 77.56E covers about 741 km of area at an elevation of 3,000 feet above sea level. The average temperature of the city is least about 15.4 °C and reach up to 36 °C and recorded an annual rainfall of 179 mm. Bangalore city has a tropical climate throughout the year and it is more pleasant than other south Indian cities. The urban people experience more heat waves in summer and cool during the month of December. The soil found in this zone is red, red laterite, fine loamy and clay. However, the vegetation of the area is dry and moist deciduous trees. There is no rivers due to flat land but water scarcity is solved the river Kaveri and Thippagondanahalli reservoir.

Limited vegetation can be observed such as Bannerghatta National Park, Nandi hills, Lalbagh, Cubbon park, public parks are found in and around Bangalore urban. The official language of the city is Kannada. The highest population observed in urban than rural areas of Bangalore with various religious neighbour people of north Karnataka, other states of India and also non-residential Indians for the completion of academics and occupation. The life style of the city is varied due to the presence of various dwelled people. The food and the food habits have shown drastic changes due to global exchange of food resources in and around Bangalore urban.

2. MATERIALS AND METHODS

Enlisting of Wild and cultivated fruits resource plants:

The enlisting of Wild and cultivated fruits resource plants survey have been conducted in historical public parks, gardens, waste lands, avenues, temples, markets, terrace, kitchen gardens of residential areas and fruit markets in Bangalore city to gather the data of botanical name, family, habit, status, utilisation by interviewing housewives, age olds and fruits marketing people of Bangalore urban.

Authentication of Wild and cultivated fruits resource plants:

The collected data on wild and cultivated fruits resource plant species with Botanical name, family, English name, habit, status and utilisation were identified by using available regional floristic literatures of Ramaswamy and Razi 1973, Marigowda and Krishnaswamy 1968, Rao 2008, Roy *et al.* 1998, Singh and Kumar 2012, Sharma *et al.* 1984, Yoganarasimhan 1996, Jain and Rao and Gurudeva 2001.

3. RESULTS AND DISCUSSION

The study shows exceptional distribution of assorted populace, culture, food habits and utilisation of wild and cultivated fruits resource plant species for the present and future generation of Bangalore city. The enlisting of wild and cultivated fruits resources plant species is necessary to retrieve the occurrence, distribution, acclimatisation, cultivation and utilisation of commonly available wild and cultivated fruits resource plant species to widened the food habits to have micro and macro nutrients in the family diet to overcome malnutrition observed in women, children and age olds of Bangalore city. Table. No.1 Demonstrated the data of botanical name, family, habit, English name, status and utilisation observed in populace of Bangalore urban. Enlisting of 51 wild and cultivated fruits resource plant species belonging to 38 genera of 27 families utilised as food preparation (Figure.1). The wild and cultivated fruits resource plant species found in habits such as Herbs (04), Climbers (04), Shrubs (11) and Trees (32) of Bangalore urban (Figure. No.2). Nearly 29 fruits plant species obtained from wild, 16 from cultivated and 06 from wild/cultivated origin. Approximately 48 wild and cultivated fruits plants consumed as raw, 01 boiled and 02 fruits used as raw/boiled forms.

Nandini and Shiddamallayya,
Conservation of wild and cultivated fruits resources of Bangalore urban,
Species, 2015, 12(35), 87-91,
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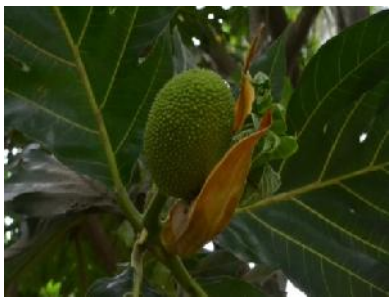
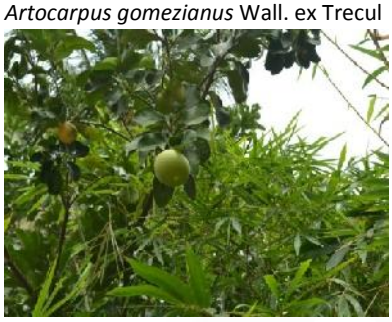
Figure 1
Wild and cultivated fruits plant resources of Bangalore urban

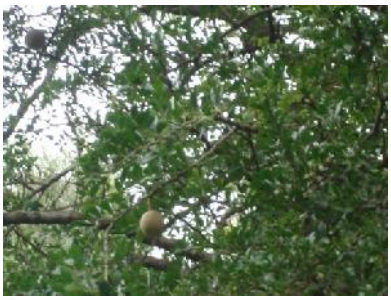

Annona squamosa L.


Artocarpus gomezianus Wall. ex Trecul


Averrhoa bilimbi L.

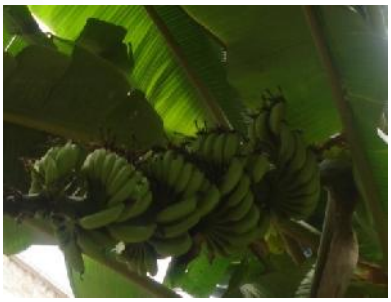

Carica papaya L.

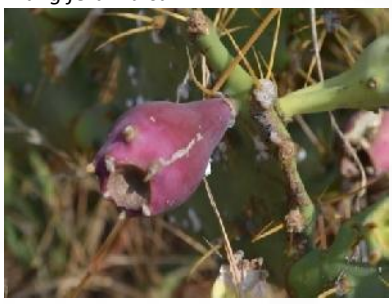

Citrus maxima (Burm.) Osbeck


Limonia acidissima L.

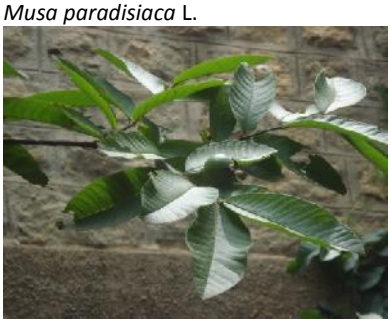

Mangifera indica L.

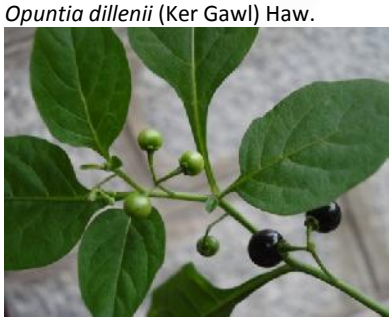

Muntingia calabura L.

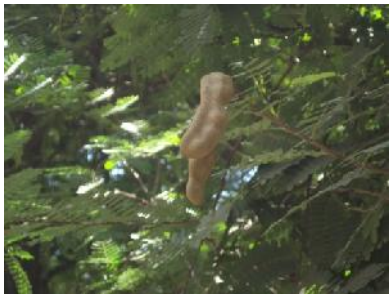

Musa paradisiaca L.


Opuntia dillenii (Ker Gawl) Haw.


Persea americana Mill.


Psidium guajava L.


Solanum americanum Mill.


Tamarindus indica L.


Terminalia catappa L.

Nandini and Shiddamallayya,
Conservation of wild and cultivated fruits resources of Bangalore urban,
Species, 2015, 12(35), 87-91,
http://www.discovery.org.in/s.htm

Table 1

Conventionally used wild and cultivated fruits resource plants of Bangalore urban

Sl. No	Botanical name	Family	English name	Habit	Status	Utilisation
1.	*Aegle marmelos* (L.) Correa	Rutaceae	Bael fruit	Tree	Wild	Raw
2.	*Anacardium occidentale* L.	Anacardiaceae	Cashew nut	Tree	Cultivated	Raw
3.	*Annona reticulata* L.	Annonaceae	Bullock's heart	Tree	Wild/Cultivated	Raw
4.	*Annona squamosa* L.	Annonaceae	Custard apple	Tree	Wild/Cultivated	Raw
5.	*Artocarpus gomezianus* Wall. ex Trecul	Moraceae	Monkey jack	Tree	Cultivated	Boiled
6.	*Artocarpus heterophyllus* Lam.	Moraceae	Jack fruit	Tree	Wild/Cultivated	Raw/Boiled
7.	*Averrhoa bilimbi* L.	Averrhoaceae	Bilimbi	Tree	Cultivated	Raw
8.	*Averrhoa carambola* L.	Averrhoaceae	Kamaranga	Tree	Cultivated	Raw
9.	*Azadirachta indica* A.Juss	Meliaceae	Neem	Tree	Wild	Raw
10.	*Borassus flabellifer* L.	Arecaceae	Palmyra palm	Tree	Wild	Raw
11.	*Carica papaya* L.	Caricaceae	Papaya	Tree	Wild/Cultivated	Raw/Boiled
12.	*Carissa carandas* L.	Apocynaceae	Bengal currant	Shrub	Wild	Raw
13.	*Citrus limon* (L.) Burm.f.	Rutaceae	Lemon	Shrub	Cultivated	Raw
14.	*Citrus medica* L.	Rutaceae	Citron	Shrub	Cultivated	Raw
15.	*Citrus reticulata* Blanco	Rutaceae	Common orange	Shrub	Cultivated	Raw
16.	*Citrus sinensis* (L.) Osbeck	Rutaceae	Sweet orange	Shrub	Cultivated	Raw
17.	*Cocos nucifera* L.	Arecaceae	Coconut	Tree	Wild	Raw
18.	*Cordia dichotoma* G.Forst	Cordiaceae	Sebesten plum	Tree	Wild	Raw
19.	*Cucumis callosus* (Rottler) Cogn.	Cucurbitaceae	Sweet melon	Climber	Wild	Raw
20.	*Cucumis melo* L.var. melo	Cucurbitaceae	Musk melon	Climber	Wild	Raw
21.	*Dillenia indica* L.	Dilleniaceae	Elephant apple	Tree	Cultivated	Raw
22.	*Ficus racemosa* L.	Moraceae	Cluster fig	Tree	Wild	Raw
23.	*Ficus religiosa* L.	Moraceae	Peepul	Tree	Wild	Raw
24.	*Flueggea virosa* (Roxb.ex Willd.) Royle	Euphorbiaceae	Bush weed	Shrub	Wild	Raw
25.	*Lantana camara* L.	Verbenaceae	Wild sage	Shrub	Wild	Raw
26.	*Limonia acidissima* L.	Rutaceae	Wood apple	Tree	Wild	Raw
27.	*Mangifera indica* L.	Anacardiaceae	Mango	Tree	Wild/Cultivated	Raw
28.	*Manilkara zapota* (L.) P.Royen	Sapotaceae	Sapota	Tree	Cultivated	Raw
29.	*Morus alba* L.	Moraceae	Mulberry	Tree	Wild	Raw
30.	*Muntingia calabura* L.	Elaeocarpaceae	Jamaican cherry	Tree	Wild	Raw
31.	*Musa paradisiaca* L.	Musaceae	Banana	Herb	Cultivated	Raw
32.	*Opuntia dillenii* (Ker Gawl) Haw.	Cactaceae	Prickly pear	Herb	Wild	Raw
33.	*Passiflora edulis* Sims	Passifloraceae	Passion fruit	Climber	Cultivated	Raw
34.	*Passiflora foetida* L.	Passifloraceae	Foetid passion flower	Climber	Wild	Raw
35.	*Persea americana* Mill.	Lauraceae	West Indian	Tree	Cultivated	Raw

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			avocado			
36.	*Phoenix sylvestris* (L.) Roxb.	Arecaceae	Wild date palm	Tree	Wild	Raw
37.	*Phyllanthus acidus* (L.) Skeels	Euphorbiaceae	Star gooseberry	Tree	Wild	Raw
38.	*Phyllanthus emblica* L.	Euphorbiaceae	Indian gooseberry	Tree	Wild	Raw
39.	*Phyllanthus reticulatus* Poir	Euphorbiaceae	Black honey	Shrub	Wild	Raw
40.	*Physalis angulata* var. *angulata*	Solanaceae	Native gooseberry	Herb	Wild	Raw
41.	*Pithecellobium dulce* (Roxb.) Benth.	Mimosaceae	Manila tamarind	Tree	Wild	Raw
42.	*Psidium guajava* L.	Myrtaceae	Guava	Tree	Cultivated	Raw
43.	*Punica granatum* L.	Lythraceae	Pomegranate	Tree	Cultivated	Raw
44.	*Solanum americanum* Mill.	Solanaceae	Black night shade	Herb	Wild	Raw
45.	*Solanum rudepannum* Dunal	Solanaceae	Turkey berry	Shrub	Wild	Raw
46.	*Syzygium jambos* (L.) Alston	Myrtaceae	Malay apple	Tree	Cultivated	Raw
47.	*Syzygium cumini* (L.) Skeels	Myrtaceae	Black plum	Tree	Wild	Raw
48.	*Tamarindus indica* L.	Caesalpiniaceae	Tamarind	Tree	Wild	Raw
49.	*Terminalia catappa* L.	Combretaceae	Indian almond	Tree	Wild/Cultivated	Raw
50.	*Ziziphus jujuba* Mill.	Rhamnaceae	Red date	Shrub	Wild	Raw
51.	*Ziziphus nummularia* (Burm.f.) Wight & Arn.	Rhamnaceae	Wild jujube	Shrub	Wild	Raw

Credibility of Family:

Enlisted information of wild and cultivated fruits resource plants revealed highest number of plants from the family 06 from Rutaceae, 05 from Moraceae, 04 from Euphorbiaceae, 03 from Arecaceae, Solanaceae, Myrtaceae, 02 plants from Anacardiaceae, Annonaceae, Averrhoaceae, Cucurbitaceae, Passifloraceae, Rhamnaceae and 01 plants from Apocynaceae, Cactaceae, Caesalpiniaceae, Caricaceae, Combretaceae, Cordiaceae, Dilleniaceae, Elaeocarpaceae, Lauraceae, Meliaceae, Mimosaceae, Musaceae, Lythraceae, Sapotaceae, and Verbenaceae.

4. CONCLUSION

The wild and cultivated fruits can be used as traditional food recipes for transformation of traditional knowledge of elder generation. Few wild fruits can be used in the preparation of jams, jellies and juice to attract present younger generation. Wild and cultivated fruits plants can be conserved through cultivation in historical parks, gardens, avenues, temples, barren lands, terrace and kitchen gardens to obtain fresh fruits for the day to day requirements. The proper utilisation of commonly available seasonal wild and cultivated fruits promotes health by increasing immune system and avoids seasonal diseases. The various wild fruits from herbs and climbers can be selected for cultivation by following scientific methods for the conservation of wild and cultivated fruits plant species for future generation.

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