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PRELIMINARY SURVEY OF EDIBLE AND WILD LEAFY VEGETABLES OF BHADRA RESERVOIR PROJECT AREA, KARNATAKA

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Abstract:

Bhadra Reservoir Project area is located in Malnad region of Karnataka and having rich diversity of edible and wild leafy vegetable plants. These wild leafy vegetables are low in calories and fat, and rich in protein dietar fiber, iron, vitamins and manganese. This paper provides the information of 44 species and 36 genera of 26 families. Among families Amaranthaceae is dominant with 12 species followed by Fabaceae with 4 species and Poaceae, Asteraceae, Portulacaceae, Lamiaceae with 02 species each respectively. Rest of the families consists of single species. The peoples of this area mainly depend on wild leafy vegetables as alternative food resources other than cultivated vegetables.

Key Words: Edible Plants, Wild Leafy Vegetables, Bhadra Reservoir Project Area & Karnataka

Introduction

Leaf vegetables contain many typical plant nutrients, but since they are photosynthetic tissues, their vitamin K levels in relation to those of other fruits and vegetables, as well as other types of foods, are particularly notable. The reason is that phylloquinone, the most common form of the vitamin, is directly involved in photosynthesis. This causes leaf vegetables to be the primary food class that interacts significantly with the anticoagulant pharmaceutical warfarin (en. wikipedia.org; Nagaraj Parisara and Kiran, 2016). The nutritional compounds present in wild plants are carbohydrates in the form of starch and sugars, protein, lipid, in the form of oil, vitamins, minerals, etc. Apart from these antioxidant, like ascorbic acid, phenols such as cholorogenic acid and its polymers are available in plant because of these component, the wild vegetable must have potential to improve physical as well as mental health, help in reduce the risk of disease (Aberoumand, A, et al, 2009 ; Atram Seema,2015). No investigation has been carried out on traditional knowledge of edible and wild leafy vegetables of the present study area. Hence, this study was undertaken in Bhadra Reservoir Project Area of Karnataka and it is helpful for further research by scientific community.

Materials and Methods:

Study Area: The Bhadra Project area is located at latitude 13°42' N and longitude 75°38'20" E and situated in Malnad region of Karnataka.

Collection of Data: Field explorations was conducted to study the diversity of wild leafy vegetable plants occurring in Bhadra reservoir Project area of Karnataka .The study was based on extensive and intensive field surveys undertaken and the areas include. Singanamane, Chowli camp, Kudreshed, Shanti Nagara, PWD colony, KPC colony, Sadal road during the period January 2009 to September 2009. Wastelands, road side fields, agricultural areas and house gardens were surveyed in the present study. The plant specimens have been studied and identified by using floras (Hooker 1872-1897; Gamble 1915-1936; Sharma et al. 1984, 1988; Saldanha 1984, 1996; Keshava Murthy and Yoganarasimhan 1990), besides other new books and monographs.

Results and Discussion:

A total of 44 species belonging to 36 genera and 26 families of edible and wild leafy vegetable plants were recorded (Table 1). Among families Amaranthaceae is dominant with 12 species followed by Fabaceae with 4 species and Poaceae, Asteraceae, Portulacaceae, Lamiaceae with 02 species each respectively. Remaining families consists of single species each. Figure 1 shows the number of edible and wild leafy vegetable plants in each family. Roshan Adhikari et al. (2012) reported that *Basella alba* has been used from a long time back for the treatment of many diseases like dysentery, diarrhoea, anemia, cancer etc. It has also been utilized for different kinds of healing activities. The chemical composition of the leaf extract has been found to be: proteins, fat, vitamin A, vitamin C, vitamin E, vitamin K, vitamin B9 (folic acid), riboflavin, niacin, thiamine and minerals such as calcium, magnesium and iron. Some unique constituents of the plant are basellasaponins, kaempherol and betalain (Roshan Adhikari et al., 2012). Leafy vegetables are herbaceous, shrub where leaf is edible part. It is observe that the knowledge of wild leafy vegetables may be lost in near future, unless efforts are made to educate new generation about their medicinal importance and government policies should be

renewed to improve the wild vegetable status, whose potential source of nutrition is currently undervalued / Nutrition is basic need of body. Green leafy vegetables are occupied important place in diet due to this high nutritional value (Atram Seema, 2015).

Species, such as *Amaranth* and *Basella*, contain oxalic acid. They should not be eaten on a regular basis without boiling and discarding the water. Also plants containing oxalic acid should be cooked in a steel pot or pan, not in aluminum pots (Chenopodium giganteum, 2010). Many of them are resilient, adoptive and tolerant to adverse climatic conditions. Although, they can be raised comparatively at lower management cost even on poor marginal lands, they have remained underutilized due to lack of awareness and popularization of technologies for utilization. Now a days, underutilized foods are gaining importance as a means to increase the per capita availability of foods (Gowthami et al., 2016). Most of the wild leafy vegetables are seasonal and they are consumed throughout the year. Peoples of this area are consumed after cooking.

Conclusion:

Sustainable management of these resources for the well being of the local communities as well as to conserve biodiversity is of the utmost importance and could also contribute to preserve cultural and genetic diversity. Uses of leafy vegetables provide seasonal, staple foods and important alternative to the agriculturally cultivated crops. Leafy vegetables are not only sources of food and nutrients to the local communities, but could also be means of income generation, if managed sustainably (Uprety et al., 2012; Prashanth Kumar and Shiddamallayya, 2014). Wild leafy vegetables always intake as food and they posses good medicinal value. So it is believed that these wild leafy vegetables contain some bioactive element. These wild leafy vegetable are used traditionally by people in householder hence, they have no or lesser side effect.

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Table 1: List of Edible and wild leafy vegetable plants with their scientific name & family

S.No	Scientific Name	Family
1.	*Achyranthes aspera*	Amaranthaceae
2.	*Alternanthera sessilis*	Amaranthaceae
3.	*Amaranthus spinosus*	Amaranthaceae
4.	*Amaranthus viridis*	Amaranthaceae
5.	*Amaranthus blitum*	Amaranthaceae
6.	*Amaranthus caudatus*	Amaranthaceae
7.	*Amaranthus cruentus*	Amaranthaceae

8.	*Amaranthus gangeticus*	Amaranthaceae
9.	*Amaranthus tricolor*	Amaranthaceae
10.	*Asparagus racemosus*	Asparagaceae
11.	*Alternanthera philoxeroides*	Amaranthaceae
12.	*Asterocantha longifolia*	Acanthaceae
13.	*Basella alba*	Basellaceae
14.	*Bambusa sp.*	Poaceae
15.	*Cassia tora*	Fabaceae
16.	*Commelina benghalensis*	Commelinaceae
17.	*Centella asiatica*	Apiaceae
18.	*Colocasia esculenta*	Araceae
19.	*Cynodon dactylon*	Poaceae
20.	*Cassia occidentalis*	Fabaceae
21.	*Celosia argentea*	Amaranthaceae
22.	*Eclipta alba*	Asteraceae
23.	*Eleocharis dulcis*	Cyperaceae
24.	*Ficus benghalensis*	Moraceae
25.	*Hibiscus cannabinus*	Malvaceae
26.	*Ipomea aquatica*	Convolvulaceae
27.	*Leucas aspera*	Lamiaceae
28.	*Moringa oleifera*	Moringaceae
29.	*Murraya koenigii*	Rutaceae
30.	*Marsilea quadrifolia*	Marsileaceae
31.	*Nelumbo nucifera*	Nelumbonaceae
32.	*Nymphaea nouchali*	Nymphaeaceae
33.	*Oxalis corniculata*	Oxalidaceae
34.	*Portuluca quadrifolia*	Portulacaceae
35.	*Portuluca oleracea*	Portulacaceae
36.	*Polygonum glabrum*	Polygonaceae
37.	*Piper nigrum*	Piperaceae
38.	*Solanum nigrum*	Solanaceae
39.	*Spinacia oleracea*	Amaranthaceae
40.	*Tamarindus indica*	Fabaceae
41.	*Terminalia bellerica*	Combretaceae
42.	*Trigonella foenum*	Fabaceae
43.	*Tridax procumbens*	Asteraceae
44.	*Vitex negundo*	Lamiaceae

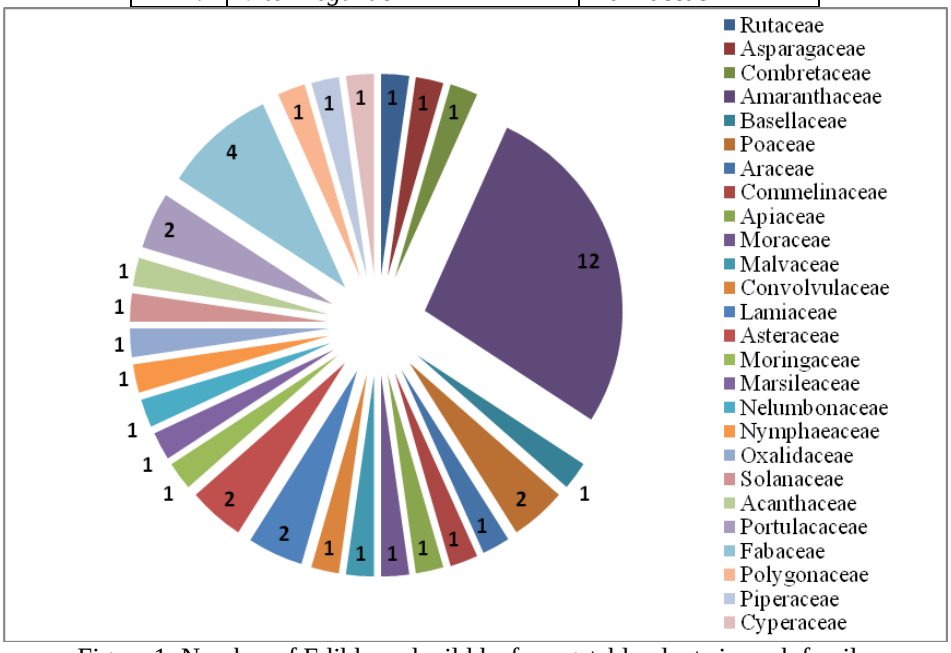

Figure 1: Number of Edible and wild leafy vegetable plants in each family