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Enumeration of Leafy Vegetables of Bhadravathi Taluk, Karnataka

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ABSTRACT

Bhadravathi taluk is situated in Malnad region of Karnataka and unique in their nature by having rich diversity of leafy vegetable plants. Leafy vegetables are low in calories and fat, and rich in protein , dietary fiber ,iron, vitamins and manganese. This paper provides the information of 41 species and 33 genera of 22 families. Among families Amaranthaceae is dominant with 12 species followed by Apiaceae, Brassicaceae and Fabaceae with 3 species each. In this study, herbs are dominant. The peoples of this area mainly depend on leafy greens as food source. Use of leafy vegetables may act as alternative food resources other than cultivated vegetables.

Keywords: Edible, Leafy Vegetables, Bhadravathi Taluk

I. INTRODUCTION

Nearly one thousand species of plants with edible leaves are known. Leaf vegetables most often come from short-lived herbaceous plants such as lettuce and spinach. Woody plants whose leaves can be eaten as leaf vegetables. The leaves of many fodder crops are also edible for humans, but usually only eaten under famine conditions. These plants are often much more prolific than more traditional leaf vegetables, but exploitation of their rich nutrition is difficult, primarily because of their high fibre content. This obstacle can be overcome by further processing such as drying and grinding into powder or pulping and pressing for juice (en.wikipedia.org).

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).

Green leafy vegetables have proved over time that they provide more protective energy to human body than any other vegetable. They not only rich in Vitamins A, B and C but also are the treasure houses of minerals like iron and calcium. There are nearly 20 leafy vegetables grown in this country all-round the year. They are very easy to grow and mostly propagated from the seeds through direct seeding (http://www.angoc.org/wp-conten).

No work has been carried out on traditional knowledge of edible leafy vegetables of the present study area. Hence, this study deals with leafy vegetables of Bhadravathi taluk of Karnataka and it is helpful for further research by scientific community.

II. METHODS AND MATERIAL

Bhadravati is situated at a distance of about 20 kilometres from the district headquarters Shimoga. It is an industrial town of Shimoga District of Karnataka . *Bhadravathi*, is located at 13° 52' N latitude and 75° 40' E longitude (Figure 1).

Ethno-botanical information was documented through questionnaires and discussion with the local villagers, farmers, old age peoples and housewives. The questions focused to be primarily on the knowledge of the usage of plants for consumption, collection, mode of food

preparations. The collection of plant specimens from the field along with photography and field notes for further taxonomical identification. Botanical identification of the collected species has been carried out by using relevant literatures (Saldanha,1984-1996; Sundriyal and Sundriyal, 2001; Prashanth Kumar and Shiddamallayya, 2014).

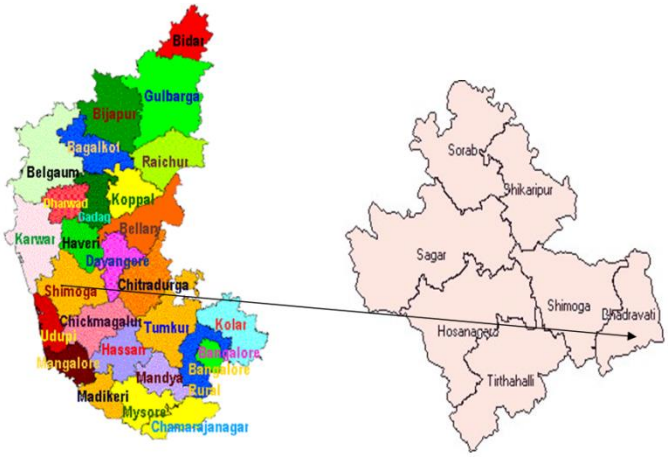

Figure 1: Study area map (source: www.afakarnataka.org; kssidc.in; www.veethi.com)

increase the supply and dietary intake of iron from plant foods are not popular. Instead, the production and consumption of animal foods are usually encouraged because of the high bioavailability of haem iron from animal foods (Ruel, 2001; Mieke Faber et al., 2007).

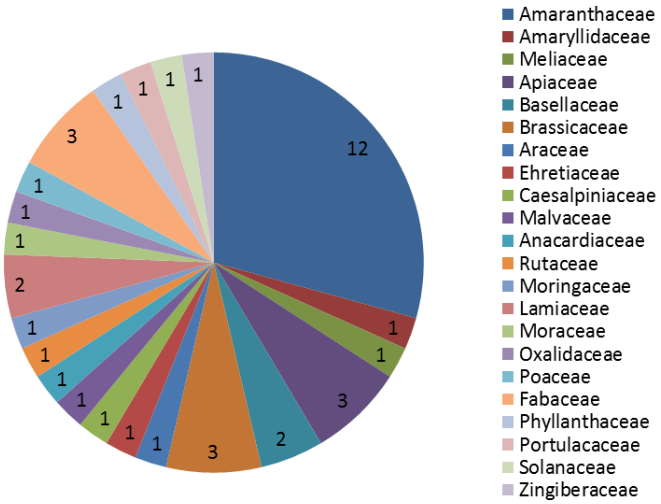

Figure 2: Number of leafy vegetables in each family

III. RESULT AND DISCUSSION

The present study shows 41 leafy vegetables belonging to 22 families and 33 genera and tabulated with botanical name and family of leafy edible plants (Table 1). Number of leafy vegetables in each family is depicted in Figure 2. Among the families Amaranthaceae is dominant with 12 species followed by Apiaceae, Brassicaceae and Fabaceae with 3 species each. The study area is rich in flora and includes various useful leafy vegetable species. In this study, leafy herbs are dominant and climbers are least in number.

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).

Dark green leafy vegetables contain relatively large amounts of iron, but they also contain oxalates and phytates that inhibit the absorption of non-haem iron. The bioavailability of non-haem iron in plant foods is therefore low and the potential contribution of plant foods towards controlling iron deficiency in developing countries has been questioned (De Pee et al., 1996; Mieke Faber et al., 2007). Agricultural interventions to

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).

Figure 3: *Basella alba*

Figure 4: *Oxalis corniculata*

Figure 5: *Centella asiatica*

Figure 6: *Amaranthus spinosus*

Figure 7 : *Mentha arvensis*

Table 1: Leafy vegetables of Bhadravathi taluk, Karnataka

Sl.No	Scientific Name	Family
1.	*Amaranthus caudatus*	Amaranthaceae
2.	*Amaranthus cruentus*	Amaranthaceae
3.	*Amaranthus blitum*	Amaranthaceae
4.	*Amaranthus blitum var oleracea*	Amaranthaceae
5.	*Amaranthus viridis*	Amaranthaceae
6.	*Amaranthus sp.*	Amaranthaceae
7.	*Amaranthus spinosus*	Amaranthaceae
8.	*Achyranthes aspera*	Amaranthaceae
9.	*Allium cepa*	Amaryllidaceae
10.	*Alternanthera sessilis*	Amaranthaceae
11.	*Azadirachta indica*	Meliaceae
12.	*Anethum graveolens*	Apiaceae
13.	*Basella alba*	Basellaceae
14.	*Basella rubra*	Basellaceae
15.	*Brassica oleracea*	Brassicaceae
16.	*Brassica rapa*	Brassicaceae
17.	*Beta vulgaris*	Amaranthaceae
18.	*Coriandrum sativum*	Apiaceae
19.	*Colocasia esculenta*	Araceae
20.	*Centella asiatica*	Apiaceae
21.	*Carmona retusa*	Ehretiaceae
22.	*Celosia argentea*	Amaranthaceae
23.	*Cassia tora*	Caesalpiniaceae
24.	*Hibiscus cannabinus*	Malvaceae
25.	*Mangifera indica*	Anacardiaceae
26.	*Murraya koenigii*	Rutaceae
27.	*Moringa oleifera*	Moringaceae
28.	*Mentha arvensis*	Lamiaceae
29.	*Morus alba*	Moraceae
30.	*Oxalis corniculata*	Oxalidaceae
31.	*Ocimum basilicum*	Lamiaceae
32.	*Oryza sativa*	Poaceae
33.	*Phaseolus vulgaris*	Fabaceae
34.	*Phyllanthus emblica*	Phyllanthaceae
35.	*Portulaca oleracea*	Portulacaceae

36.	*Raphanus sativus*	Brassicaceae
37.	*Spinacia oleracea*	Amaranthaceae
38.	*Solanum nigrum*	Solanaceae
39.	*Tamarindus indica*	Fabaceae
40.	*Trigonella foenum*	Fabaceae
41.	*Zingiber officinale*	Zingiberaceae

IV. CONCLUSION

Several leafy vegetables can benefit local people not only as food, but also with their medicinal properties. These multi-valued resources are threatened by several anthropogenic and natural causes such as land-use change, habitat destruction, unscientific harvesting, over-grazing, and invasive species. Sustainable management of these resources for the wellbeing 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 (Uprety et al., 2012; Prashanth Kumar, and Shiddamallayya, 2014). 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).

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