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NON-EDIBLE OIL YIELDING PLANTS OF BHADRAVATHI TALUK, KARNATAKA: A PRELIMINARY SURVEY

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Abstract:

The present study deals with preliminary survey of Non-edible oil yielding plants in and around Bhadravathi taluk, Karnataka during 2012-2013. The study was based on extensive and intensive field surveys. During this study, a total of 27 Non-edible oil seed bearing plants belonging to 23 genera and 17 families were reported. The scientific names of the plants with their family names have been reported in the current study.

Key Words: Bhadravathi Taluk, Non-Edible Oil Seed Bearing Plants

Introduction:

Non- edible oil yielding plants can be grown abundantly in wastelands and fields and which can be considered for biofuel production. Some of the non-edible oil seed bearing plants include *Jatropha curcas, Millettia pinnata, Ricinus communis , Cascabela thevetia* and *Azadirachtha indica* etc.

No work has been carried out on diversity of Non-edible oil yielding plants occurring in and around Bhadravathi taluk, Karnataka. Hence, the present study has been carried out and it is helpful for further scientific research.

Materials and Methods:

Study Area:

Bhadravathi, is located at 13° 52' N latitude and 75° 40' E longitude. 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. Bhadravati is at an altitude of 597 metres (1,959 ft) above sea level. The Bhadra River flows through the city, then flows into the Bhadra Wildlife Sanctuary south of the city. The Bhadravati taluk has a total area of 675.08 square kilometres (260.65 sq mi), a population of 338,611, and a population density of 501.56 inhabitants per square kilometre (1,299.0/sq mi). The taluk borders five other taluks, the Shimoga taluk to the west, the Honnali taluk to the north, the Channagiri taluk to the east, the Tarikere taluk to the south-east, and the Narasimharajapura taluk to the south-west (Census of India 2001; en.wikipedia.org)

Collection of Data:

Field explorations was conducted during 2012-13 to know the diversity of Non-edible oil yielding plants occurring in Bhadravathi taluk of Karnataka .The study was based on extensive and intensive field surveys undertaken in and around Bhadravathi area *i.e*. Singanamane, Kudreshed, Shanti Nagara, Shankaraghatta, Malenahalli, Nellisera, Tavaraghatta, Gonibeedu, H.K.Junction and Bommanakatte during the period September 2012-August 2013.

Surveys were undertaken in the wastelands, road side fields and remote agricultural areas. The plant specimens have been studied and identified by using floras (Hooker 1872-1897; Gamble 1915-1936; Rao and Razi 1981; Sharma *et al*. 1984, 1988; Saldanha 1984, 1996; Keshava Murthy and Yoganarasimhan 1990; Saroj K. Padhi and Singh, 2011), besides other new monographs.

Results and Discussion:

Table 1 depicted the checklist of non-edible oil yielding plants having 27 species belonging to 23 genera and 17 families. The dominant families of the present study are Fabaceae and Apocynaceae with 4 species each followed by Euphorbiaceae with 3 species (Figure 1). The oil obtains from such plant seeds are used for the manufacture soaps, candles, paints, varnishes, linoleum, lighting etc.

Saroj K. Padhi and Singh (2011) review paper assesses and integrates the biological, chemical and genetic attributes of the plant and describes about the different tree borne oilseeds in India. They reported that these plants provide farmers with substantial income.

Millettia pinnata oil is used for lighting purpose in the temple and houses and used as bio-fuel in tractor and generators. *Azadirachtha indica* oil is used in soap industries, in case of pharmaceuticals, pesticides and boot polishing. *Santalum album* oil is used in the manufacture of soap.

Ricinus communis oil is an effective motor lubricant and has been used in internal combustion of engines. It has historically been popular for lubricating two-stroke engines due to high resistance to heat compared to petroleum-based oils (https://en.wikipedia.org).

Eucalyptus oil is readily steam distilled from the leaves and can be used for cleaning and as an industrial solvent, as an antiseptic, for deodorizing, and in very small quantities in food supplements (https://en.wikipedia.org).

Conclusion:

Non-edible oil yielding plant seeds have been used for biofuel production. These species have grown in waste lands. Plantation of non edible oil bearing trees in wastelands result in substantial quantities of biofuel can be available in future. It is believed that the Non- edible oil bearing plant resources of the Bhadravathi area provides a checklist of the floristic diversity which will serve as a reference for scientists and policy makers.

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Table 1: Non-edible oil yielding plants of Bhadravathi taluk, Karnataka

Sl.No	Scientific Name	Family
1.	*Aegele marmelos*	Rutaceae
2.	*Annona squamosa*	Annonaceae
3.	*Annona reticulata*	Annonaceae
4.	*Azadirachta indica*	Meliaceae
5.	*Argemone mexicana*	Papaveraceae
6.	*Butea frondosa*	Fabaceae
7.	*Bauhinia variegata*	Fabaceae
8.	*Bauhinia purpurea*	Fabaceae
9.	*Basella rubra*	Basellaceae
10.	*Calotropis procera*	Apocynaceae
11.	*Calotropis gigantea*	Apocynaceae
12.	*Coriandrum sativum*	Apiaceae
13.	*Cascabela thevetia*	Apocynaceae
14.	*Eucalyptus sp.*	Myrtaceae
15.	*Euphorbia tirucalli*	Euphorbiaceae
16.	*Gossypium sp.*	Malvaceae
17.	*Holarrhena antidysenterica*	Apocynaceae
18.	*Jatropha curcas*	Euphorbiaceae
19.	*Magnolia champaca*	Magnoliaceae
20.	*Moringa oleifera*	Moringaceae
21.	*Millettia pinnata*	Fabaceae
22.	*Mangifera indica*	Anacardiaceae
23.	*Ricinus communis*	Euphorbiaceae
24.	*Santalum album*	Santalaceae
25.	*Tectona grandis*	Lamiaceae
26.	*Terminalia chebula*	Combretaceae
27.	*Terminalia sp.*	Combretaceae

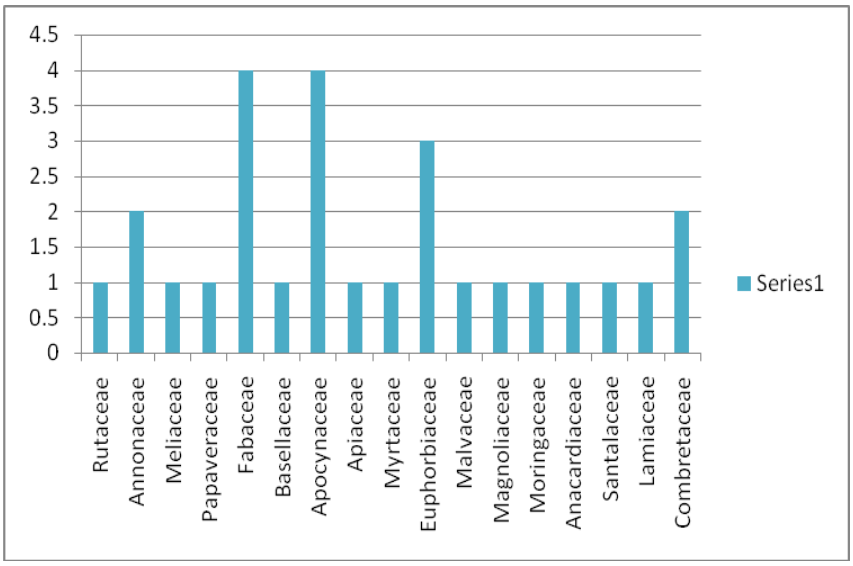

Figure 1: Number of Non-edible oil yielding plants occurring in each family