



iJRASET

International Journal For Research in
Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 4 Issue: III Month of publication: March 2016

DOI:

www.ijraset.com

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Edible Oil Yielding Plants of Bhadra Reservoir Project Area, Karnataka: A Preliminary Study

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Abstract--The present study carried out with a preliminary survey of edible oil yielding plants in and around Bhadra reservoir project area, Karnataka during 2013-2014. The study was based on extensive and intensive field surveys. During this study, a total of 22 edible oil bearing plants belonging to 22 genera and 15 families were recorded. The scientific names of the plants with their family names have been reported in the current study. The importances of few edible oil bearing plants are discussed in this paper.

Keywords--Bhadra reservoir Project, Edible oil yielding plants.

I. INTRODUCTION

Edible plant oils are used in food, both in cooking and as food supplements. The oil obtained from such plant seeds is used for the manufacture of hair oil, soaps, refined cooking oils, candles, paints, varnishes, skin care creams, biofuel, lighting etc. Some of the edible oil seed bearing plants include *Cocos nucifera*, *Arachis hypogea* and *Zea mays* etc. The aim of the present study is to know the diversity of edible oil yielding plants occurring in and around Bhadra reservoir Project area, Karnataka. Hence, the present study has been carried out and it is helpful for further scientific research.

II. MATERIALS AND METHODS

A. 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.

B. Collection of Data

Field explorations were conducted during 2014-15 to study the diversity of edible oil yielding 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, Kudreshed, Shanti Nagara, KPC colony, Sadal road during the period October 2013- September 2014. Wastelands, road side fields, remote 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; Rao and Razi 1981; Sharma *et al.* 1984, 1988; Saldanha 1984, 1996; Keshava Murthy and Yoganarasimhan 1990), besides other new books and monographs.

III. RESULTS AND DISCUSSION

Table 1 depicted the checklist of edible oil yielding plants. A total of 22 species belonging to 22 genera and 15 families were recorded. Among families Arecaceae and Cucurbitaceae are dominant with 3 species followed by Malvaceae, Poaceae and Apiaceae with 2 species each respectively. Coconut oil, is an edible oil extracted from the kernel or meat of mature coconuts harvested from the coconut palm (*Cocos nucifera*). It has various applications. Because of its high saturated fat content, it is slow to oxidize and, thus, resistant to rancidification, lasting up to six months at 24 °C (75 °F) without spoiling ("Coconut oil". Transport Information Service, German Insurance Association, Berlin. 2015; <https://en.wikipedia.org/wiki/Peanut>).

Arachis hypogea oil give a pleasant tasting for human consumption and also used for cooking. As a legume, *Arachis hypogea* belongs to the botanical family Fabaceae (also known as Leguminosae, and commonly known as the bean or pea family) (The Plant List: A Working List of All Plant Species, 2013). Like most other legumes, peanuts harbor symbiotic nitrogen-fixing bacteria in root nodules (Legumes of The World-Royal Botanic Gardens, Kew. www.kew.org, 2015; <https://en.wikipedia.org/wiki/Peanut>). This capacity to fix nitrogen means peanuts require less nitrogen-containing fertilizer and improve soil fertility, making them valuable in crop rotations.

Zea mays (Maize) is a major source of starch. Cornstarch (maize flour) is a major ingredient in home cooking and in many

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industrialized food products. Maize is also a major source of cooking oil (corn oil) and of maize gluten. Maize starch can be hydrolyzed and enzymatically treated to produce syrups, particularly high fructose corn syrup, a sweetener; and also fermented and distilled to produce grain alcohol. Grain alcohol from maize is traditionally the source of whiskey. Maize is sometimes used as the starch source for beer. Maize is mostly grown to feed livestock, as forage, silage (made by fermentation of chopped green cornstalks), or grain. Maize meal is also a significant ingredient of some commercial animal food products, such as dog food (<https://en.wikipedia.org>).

Punica granatum are used in cooking, baking, meal garnishes, juice blends, smoothies, and alcoholic beverages, such as cocktails and wine. *Punica* seed oil contains punicic acid (65.3%), palmitic acid (4.8%), stearic acid (2.3%), oleic acid (6.3%), and linoleic acid (6.6%)(Antioxidant and eicosanoid enzyme inhibition properties of pomegranate seed oil and fermented juice flavonoids,1999).

IV. CONCLUSION

Edible oil yielding plant seeds have been used as cooking oil and other food supplements. It is believed that the edible oil bearing plant resources of the Bhadra reservoir Project area provides a checklist of the floristic diversity which will serve as a prepared reference for scientific research.

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Table 1: Edible oil yielding plants of Bhadra reservoir Project area, Karnataka

Sl.No	Scientific Name	Family
1.	Anacardium occidentale	Anacardiaceae
2.	Arachis hypogea	Fabaceae
3.	Amaranthus cruentus	Amaranthaceae
4.	Brassica sp.	Brassicaceae
5.	Cocos nucifera	Arecaceae
6.	Citrus sp.	Rutaceae
7.	Citrullus vulgaris	Cucurbitaceae
8.	Cucurbita	Cucurbitaceae
9.	Coriandrum sativum	Apiaceae
10.	Carica papaya	Caricaceae
11.	Daucus carota	Apiaceae
12.	Elaeis sp.	Arecaceae
13.	Gossypium sp	Malvaceae
14.	Helianthus sp	Asteraceae
15.	Hibiscus sp.	Malvaceae
16.	Momordica charantia	Cucurbitaceae

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17.	Moringa oleifera	Moringaceae
18.	Oryza sativa	Poaceae
19.	Punica granatum	Lythraceae
20.	Phoenix sp.	Arecaceae
21.	Solanum lycopersicum	Solanaceae
22.	Zea mays	Poaceae

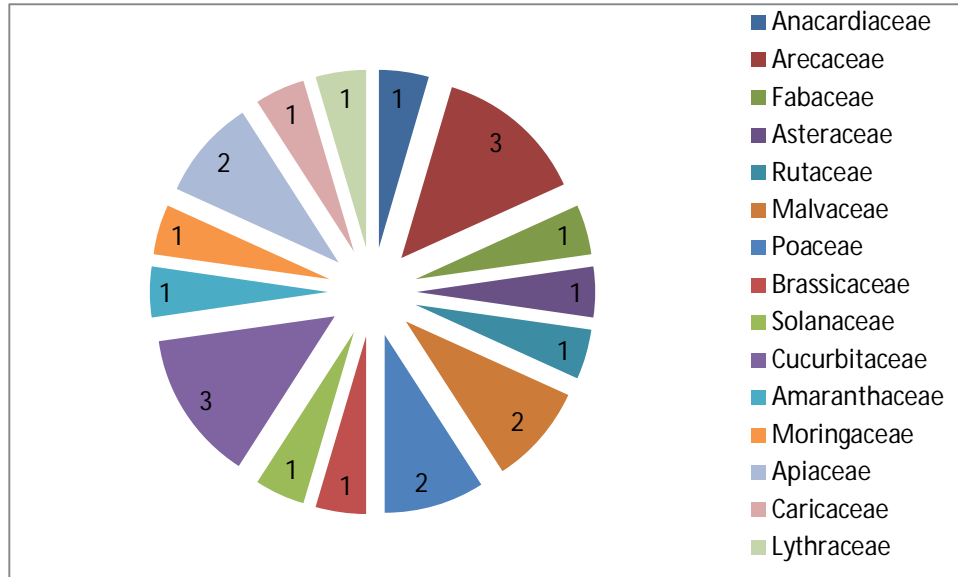


Figure 1: Number of edible oil yielding plants occurring in each family



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