

PHYSICOCHEMICAL PROPERTIES OF *MADHUCA LONGIFOLIA* FLOWER

Tabassum H. Mansuri*

JET's Z.B. Patil College, Dhule. (M.S.) 424002 *Corresponding Author

S. S. Yadav

JET's Z.B. Patil College, Dhule. (M.S.) 424002

ABSTRACT *Madhuca longifolia* commonly known as Mahua, is a tropical tree, belongs to family Sapotaceae. It is fast growing economical tree that grows to approximately 20 meters in height. It is cultivated in warm and humid regions for its seeds, flower and wood. Mahua has significant place in local culture. It is highly nutritious tree and can also use as an herbal medicine for treatment of various diseases. The main product of tree is its flower. The major components of flower are Sugars and additionally it contains proteins, vitamins, organic acid and essential oils. Present paper reinvestigate the earlier work performed on Mahua flower and highlight the use of mahua flower in value addition

KEYWORDS : CMI, Socio-cultural Factor, Politics, Marriage, Religion

INTRODUCTION:

Mahua trees are used in households and has commercial value, the most visible face of mahua is its flower. The cream coloured corollas of the flower of the tree are commercially known as Mahua flower. The ripe flower, which fall from the tree, are collected. The yield per tree ranges from 100-200 kg. The major components of flower are Sugars and additionally it contains proteins, vitamins, organic acid and essential oils. There are several references on the general studies (The Wealth of India: Raw Materials, 1998, Saklani and Jain 1994, Sidhu et al. 2009, Shruti et al. 2010) Local people use flower for brewing alcohol. it contains tannins as tannins are excellent antioxidant that helps in giving the structure, texture and flavour to wine. Mahua flowers are also considered good for cooling, and used as tonic. 90 percent of mahua flower of the production goes into brewing beverages. Mahua flower has various types of medicinal uses due to its tannin content. (Patel et al., 2012) Mahua flower has wide range of scope for value addition. mahua flower collected some of them can be used for preparation of products like jam, jelly, biscuits, candies etc and dried for storage, during drying process 80% moisture is lost (Patel and Naik, 2011)

The local people fermented the flower to produce an alcoholic drink Called Mahua, Country liquor. They consider the tree and mahua drink as part of their cultural heritage Men and Women, consume this drink and is an obligatory item during celebration and evening activities/(National oilseed and vegetable oil Development, Board Ministry of Agriculture, Govt. of India)

Mahua flower if exploited can yield products of superior nutritional and technological characteristics but till now it has remained as a food, fodder and fuel for the people of lower economic strata in rural areas. The utilisation has remained limited to village level only, hence there is an ample scope for diversified uses of mahua.

Morphological Characters of flowers:

Table 1: Morphological Characters of flowers

Sr.No.	Morphological Characters of flower	Observation
1.	Fresh Flower colour	Pale yellow
2.	Dry Flower Colour	Brown
3.	Odour	Sweet
4.	Taste	Sweet
5.	Surface	Longitudinal
6.	Corollas	Fleshy



Fig1: Fresh flowers



Fig 2: Dry flowers

MATERIAL AND METHODS:

Mahua flowers collected from Kakadda Tal. Paradental. Maharashtra. Shed dried flower were stored at refrigerator to retain its biochemical composition and to avoid microbial contamination and spoilage. The Procedure for detection and analysis of flower is carried out following the method given in the report of National oil seeds and vegetable Development, Board Ministry of Agriculture, Govt. of India. 2009 and Harbone, 1984 Phytochemical method.

Results and Discussion

Nutritional value of flowers:

Table 2: Nutritional Properties of Mahua flower (Mishra and Padhan 2013)	
Constituents	Percentage
Moisture	19.8
Protein	6.37
Fat	0.5
Reducing Sugar	50.62
Total Inverts	54.24
Cane Sugar	3.43
Total Sugar	54.06
Ash	4.36
Calcium	8
Phosphorous	2

Physicochemical value of Mahua flower:

Physicochemical value such as the percentage of total ash, water soluble ash, and loss on drying, water soluble extractive and alcohol soluble extractive values were calculated as per the Indian Pharmacopoeia, 1996.

Table 3: Physicochemical parameters of Mahua Flower	
Parameters	Value Obtained(%w/w)
Loss on drying	17.8
Total Ash Value	0.186
Water soluble ash	0.082
Crude fibre content	15.6
Alcohol soluble extractive	0.690
Water Soluble extractive	0.678

Phytochemical screening of mahua flowers:

Ethanollic and methanolic extract of *Madhuca longifolia* flowers were subjected to preliminary phytochemical study. Extract was prepared by Soxhlet apparatus. In Table-4, ethanolic extract of *Madhuca longifolia* showed the presence of alkaloids, tannins, proteins, carbohydrates. Methanolic extract showed the presence of alkaloids, tannins, carbohydrates.

Table 4: Phytochemical screening of mahua flowers			
Phytoconstituents	Test	Ethanollic extract	Methanolic extract
Alkaloids	Tannic acid test	+ve	+ve
Tannin	Lactic acid test	+ve	+ve
Proteins	Biuret test	+ve	-ve

Flavonoids	Alkaline reagent test	-ve	-ve
Carbohydrates	Molisch's test	+ve	+ve
Amino acids	Ninhydrin reagent test	-ve	-ve
Volatile oil	Sudan red III test	-ve	-ve

(+ve)-Present, (-Ve)-Absent

CONCLUSION:

Ethanol extract of *Madhuca longifolia* showed the presence of alkaloids, tannins, proteins, carbohydrates. Methanolic extract showed the presence of alkaloids, tannins, carbohydrates. Some of these phytoconstituents may be responsible for a potent anthelmintic activity. As both the extract shows presence of Carbohydrate and Nutritional properties of *Madhuca longifolia* shows higher presence of reducing sugar, which is responsible for the natural fermentation of Mahua flower. The microorganisms get attracted towards the sugar (Carbohydrates) and microenvironment of flower formed, which further ferment the sugar from flower.

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