



## INFLUENCE OF LOCALITIES AND TREE GIRTH CLASSES ON MORPHOLOGICAL AND BIOCHEMICAL PARAMETERS OF FRUITS AND SEEDS OF *MADHUCA LONGIFOLIA*

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**ABSTRACT:** Around 70 % of tribal population in central India is engaged in collection, drying and selling of flowers of the versatile NTFP species of *Madhuca longifolia* (Family Sapotaceae). Growth attributes of mahua tree like girth at breast height (GBH) and crown spread are reported to affect flower and seed yield per tree. In the present study, a successful attempt was made to evaluate the influence of different locations and tree girth classes on morphological and biochemical parameters of fruits and seeds from Sarguja and Jashpur in North Hills Zone, Bilaspur and Balod in Chhattisgarh Plain Zone and Jagdalpur and Bhanupratapur in the Bastar Plateau Zone in Chhattisgarh. Length, width and weight of the fruits and seeds of mahua were recorded. The range of fruit length was found to be 3.56 cm to 3.71 cm whereas the range of fruit width was found to be 2.21 cm to 2.96 cm and fruit weight was found 116.8 gm to 159.9 gm. Oil percentage and saponins were estimated in seeds of *Madhuca longifolia*. Oil content and saponin content was obtained in the range of 9.95 to 53.04 % and 2.69% to 16.08% respectively. The localities yielding more oil content in seeds, viz., Jashpur and Sarguja can be used for production of mahua butter which is used in soap industry and also as edible oil.

**Key words:** *Biochemical, girth classes, morphological parameters, NTFP, oil content, saponin*

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### INTRODUCTION

Non-Timber Forest Produces (NTFPs) play an important role in the social and traditional life of millions of rural and tribal communities. Nearly 400 million people living in and around forests in India depend on NTFPs for sustenance and supplementary income. NTFPs contribute significantly to the income of about 30% of the rural people. Several studies suggest that NTFPs contribute 20- 24% of the household income of the rural people (Kaushal and Kala, 2004; Belcher, 2005). More than 80% of forest dwellers depend on NTFPs for basic necessities. According to a study by Prasad and Bhatnagar (1991), about 67% of all gatherers are women and 13% are children. In the past, the main focus of forestry was on management of timber species and NTFPs were undervalued.

*Madhuca longifolia* J.F.Gmel. (Family: "Sapotaceae") commonly known as Mahua is an important NTFP species of Central India (Krishnamurthy, 1993). It is found in the dry tropical and sub-tropical climate. It is found in the state of Uttar Pradesh, Madhya Pradesh, Orissa, Chhattisgarh, Jharkhand, Gujarat, Andhra Pradesh, Maharashtra, Bihar, West Bengal and Karnataka (Robyn and Singh, 1997; Siddiqui *et al.*, 2010; Behl and Sriwastawa, 2002). It is a medium to large sized deciduous tree (12 to 15 meters) usually with a short bole and large rounded crown. The bark is thick, dark colored, cracked, and inner bark is dark red. (Behl and Sriwastawa, 2002). Leaves are clustered at the end of branches, elliptic oblong. The orange brown ripe fleshy