



A REVIEW ON *BUCHANANIA COCHINCHINENSIS* (LOUR) M. R. ALMEIDA WITH SPECIAL EMPHASIS TO SPECIES DISTRIBUTION MODELING

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ABSTRACT: The forests of Jharkhand had witnessed high tree density of *Buchanania cochinchinensis* in past, are now facing mass destruction. The species has high medicinal, nutritional and socio-economic values, providing livelihood to tribal population of Jharkhand and also has high potential being a commercially important species. It is an attempt to cover review of study on all aspects of *B. cochinchinensis* carried out so far. Herein, we present a systematic review on diverse aspect of study on *B. cochinchinensis* published before year 2000 and upto year 2019, with emphasis on SDM and ENM, to understand and identify, the methodology and algorithm that had been adopted to address various issues. The literature search was conducted using google search using the search phrases '*Buchanania cochinchinensis*', diversity, uses, 'Species Distribution Modelling', 'Environmental Niche Modelling', and 'Maxent'. Later, we refined our search based on the research areas in which they were published: environmental sciences ecology, biodiversity conservation, zoology, plant sciences, forestry and entomology. At last, 132 scientific papers were selected, centered on species distribution modelling of *B. cochinchinensis* using Maxent. The temporal trend using SDM in the fields of ecology, biodiversity conservation, environmental sciences, forestry and plant sciences, evolutionary biology and multidisciplinary sciences were also analysed. The critical issues and related best practices discussed in this review shall support researchers with a platform of multifold information required to look in to different dimensions of study and to develop more ecologically relevant models.

Keywords: *B. cochinchinensis*, Use, Distribution, SDM, ENM, MAXENT

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1. INTRODUCTION

Buchanania cochinchinensis is an important Non-Timber Forest Produce (NTFP) of deciduous forests throughout the India and specifically to the state of Jharkhand. It is a socio-economically important underutilized fruit tree and life supporting species for tribals of Jharkhand (Patsnaik *et al.*, 2011; Khatoon *et al.*, 2015). It is considered as one of the delicious wild fruits. The greenish-white flowering of the tree occurs from January to March and yellowish-red drupe, one seeded, fruits ripen during the months of April-June and remain on the tree for long duration (Troup, 1986). The bark is rough and dark grey or black and leaves are dull green, oblong or elliptical, 10 cm to 25 cm (4" to 10") long, smooth on the margins and leathery. The leaves are crowded at the ends of the branches in an alternate arrangement and are evergreen or semi-evergreen, depending on the length of the dry season, with the branches left bare for around four to six weeks. The tree is leafless or nearly so, for a very short time during summer season. The Chironji kernels contain about 52

per-cent oil (Anonymous, 1952) which is used as a substitute for olive and almond oils (Kirtikar and Basu, 2005) while the whole kernel is used in sweet-meats or as a substitute for almond kernels (Kumar *et al.*, 2012). In central India, it is a common associate of *Shorea*

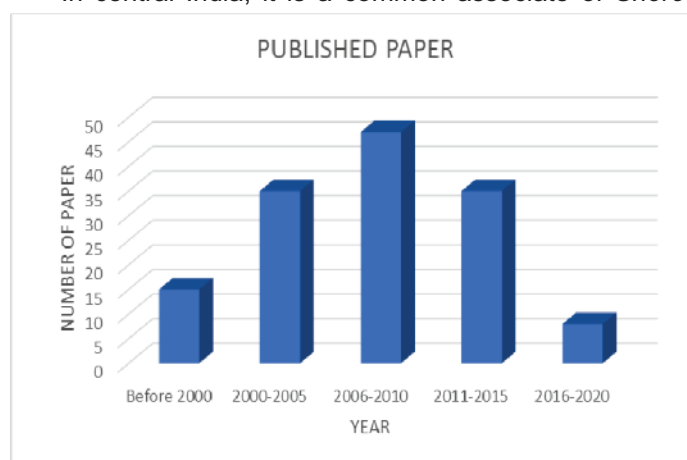


Fig. 1. Published paper on google search