



## **SURVEY AND PROSPECTING WILD SPECIES FROM MADHYA PRADESH AS ALTERNATIVE SOURCE OF JIGAT PRODUCTION FOR AGARBATHI INDUSTRY**

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**ABSTRACT:** A study was conducted to explore different plant species having potential for production of substitute Jigat to mitigate the scarcity of Jigat and dependency on traditional source for agarbathi industry in India. The survey was conducted in Madhya Pradesh India and plant samples with sticky materials such as bark, leaves, corm, tender shoot, whole plant, flower, fruits, seed etc were collected and assessed. The processed and dry samples were grinded into fine particles and sieved through 100 mesh sieve. The powder thus obtained from each plant species were studied for binding ability to prepare agarbathi as potential source of substitute Jigat (SJ). The evaluation of SJs was done by preparing agarbathi using each of the species alone and in combination. In the laboratory agarbathi prepared either by hand roll or using machine, were evaluated for stickiness, smoothness of rolled agarbathi, weight of agarbathi, quantity of fragrance absorbed, burning time, odor produced during burning and changes during storage, shelf life etc using the SJs. The study identified 10 plant species potentially suitable to be used to extract sticky material/Jigat for making agarbathi. Highest number of plant species contributed by Fabaceae. SJs from leaves of 2 and seed of 1 plant species were found best to make agarbathi. The SJ of other 7 plant species need to mix with best SJs to get optimum result.

**Keywords:** *Laboratory evaluation, substitute jigat, survey, wild plant.*

**Citation:** Biswas SC, Patel B, Mishra SN (2022) Survey and prospecting wild species from Madhya Pradesh as alternative source of Jigat production for agarbathi industry. *Indian J Trop Biodiv* 30(1&2):73-78.

### **INTRODUCTION**

Asia Pacific region is the major producer and consumer of the agarbathis. It is a best example of traditional products with indigenous technology at cottage industry level (Hazarika and Biswas, 2020; Singh and Saha, 2013). Mostly, people use Agarbathi for religious purposes and considered to be an essential item in every household, temple, etc. (Hazarika *et al.*, 2018) Agarbathis are mostly used by rural population in India which was estimated about 61% for domestic use (INBAR, 2014; Jenner and Reza, 2008). Apart from religious use, agarbathi (incense sticks) is now used for a variety of purposes such as to overcome bad smells, repel insects, spirituality, aromatherapy, meditation and simple pleasure (Hyams and Cushner, 2004; Lis-Balchin, 2006; Harper, 2010; Yadav *et al.*, 2020). India is top producer of Agarbathi in world; it has manufactured Agarbathi of both domestic and international demand. Among the Indian states Karnataka is at the first place in production of

Agarbathi. Agarbathi production by South Indian States comprises 35% of domestic market. While West-India provides 30%, North- India produces 18% and East India accounts for 17% respectively (Bordoloi and Sarmah, 2007). Apart from domestic utilization, India has supplied more than half of the world's agarbathi requirements. The agarbathis produced in India are mostly exported to USA, the UK, Latin America, Egypt, UAE, and Nigeria. It is reported that India is exporting agarbathis to nearly 150 countries which worth about Rs 900 crores per annum (Gandhi, 2012).

Agarbathi production units need five different materials: (1) bamboo sticks (for the central core of the Agarbathi); (2) charcoal powder; (3) Jigat powder; (4) Perfume/ Fragrance and (5) Packaging material. Jigat is one of the most important material which is used as binder of different materials that roll on the bamboo sticks to obtain Agarbathi. Originally, Jigat (adhesive material) is extracted from the glutinous bark of *Persea macrantha* (Syn. *Machilus macrantha*) in Central part