

Morphological Study Of *Bombax Ceiba* Collected From Botanical Hauz Rani Forest, New Delhi, India

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ABSTRACT

The scientific name of Red silk cotton tree is *Bombax ceiba*. *Bombax ceiba*, like other trees of the rubric *Bombax*, is commonly known as cotton tree. The tree is widely planted in southeastern Asian countries and regions (such as in India, Myanmar, Thailand, Vietnam, Indonesia, southern China and Taiwan, etc). This tree is also common in New Delhi reached 60m in height. They survive only in semiarid zone. The cotton filaments of this tree can be seen floating in the wind around the time of early May. In this study, we highlighted a short insight story on morphology and beneficial medicinal aspects of *Bombax ceiba* collected from forest of Hauz Rani, New Delhi, India.

Keywords: *Bombax ceiba*, Red silk cotton tree, Red silk cotton tree, Flower, Leaves, Sepals, Hauz Rani.

INTRODUCTION

Bombax ceiba grows in tropical region and reaches upto 20m to 60m height in wet tropical weather. The tree is also known as King of forest due to its beautiful flower and its massive size. The tree of *Bombax ceiba* shows two marked growth sprints in India: in spring and during the monsoon months. Maybe due to tropical climate and heavy rains, it's plant in thick populations throughout the Northeast India.

In Myanmar, its flowers are let to be dry and cooked, which is one of the traditional foods of Myanmar (Vaidyaratnam 1997). The Flower collected from Hauz Rani Garden, New Delhi (Figure 1 A and 1B). The leaves of the plant are deciduous and having stout trunk with light grey colour and conical thorn [1]. The Cup-shaped flowers is solitary or clustered, axillary or sub-terminal, fascicles at or near the ends of the branches (Figure 2C). The petals seem to reach 12 centimetres in length,

calyx is cup-shaped usually 3 lobe structure (Figure 2A and 2B).

The Staminal tube is short and stigma is light red reached upto 9 centimetres. The ovary is pink having white silky hair. Seeds are numerous, long, ovoid, black or grey in colour and packed in white cotton. The fruit is light-green in color in immature fruits, brown in mature fruits.

SYSTEMATIC POSITION

Scientific name: *Bombax ceiba*

Family: Malvaceae

Order: Malvales

Kingdom: Plantae

Bombax ceiba is a well-known plant used in the traditional system for treatment of many diseases. Several reports also reviled the therapeutic activity of *Bombax ceiba* due to the presence of flavonoids, phenolics, sesquiterpenoids, shamimicin, bombamalosides, bombamalones,

bombasin, bombasin 4-o-glucoside, and bombalin. Besides, It has also got many antioxidant, antimicrobial, anticarcinogenic, anti-inflammatory, immunomodulatory, hypotensive, hypolipidemic, antihyperglycemic, and analgesic value (Det et al. 2012, Verma et al. 2008, Saleem et al. 2016, In most of the reports, the antidiabetic efficacy of the plant extract may be summarized in two ways [2-4]. In first ways, phyto molecule may stimulate β cell for the recovery in serum insulin during oxidative injury. In second it inhibit enzymes such as α glycosidase which interfere with the glucose production in the gastro intestinal tract from complex carbohydrates.

The Extracts prepared from various parts should be standardized with the help of modern techniques for quality assurance

and control (Jagtap et al. 2014, Hussain et al. 2015, Bhargava et al. 2012). The plant is used for so many purposes which may hang unborn sustainability of the plant. Therefore, there is urgent need to develop conservation techniques and the implementation for preserving this important plant species (Yu et al. 2011, Gupta et al. 2013).

The significant impact of Ayurveda in traditional Indian medicine has a excellence properties in both the pharmacognosy and pharmacology (Williamson 2002, Government of the Health and Family Welfare 2007, Central Drug Research Institute and Publications 1990) [5-7]. These traditional use of reflect not only the quality but also efficacy of the plants.

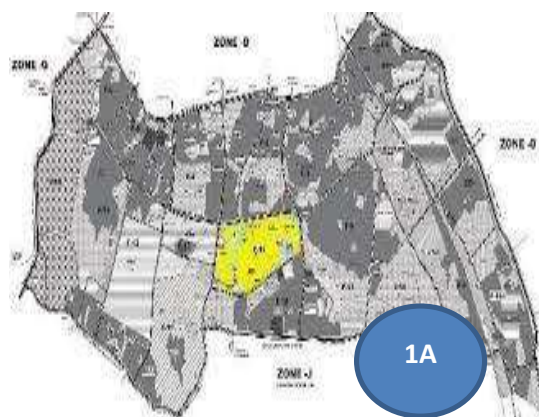


Fig.1:-Map of Hauz Rani Forest having a complete of *Bombax ceiba*.

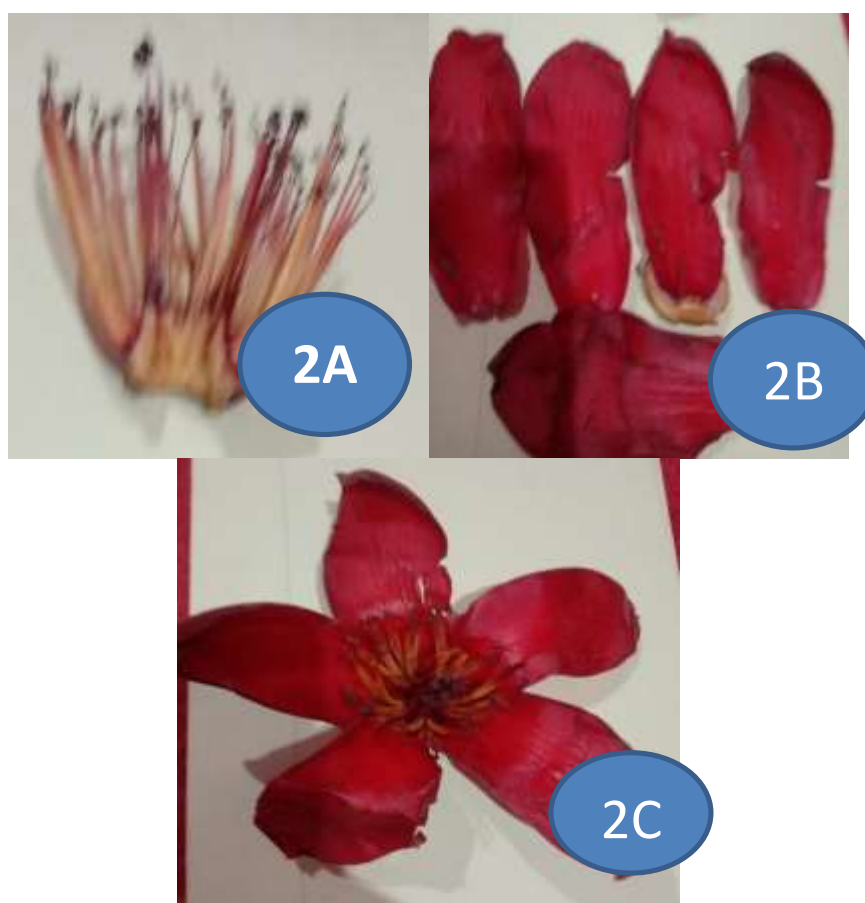


Fig.2A:-Sepals of *Bombax ceiba*
2B) Petals of *Bombax ceiba*
2C) A Complete Flower of *Bombax ceiba*

Uses of *Bombax ceiba* (Dar et al. 2005, Tundis et al. 2014, You et al. 2003, Lin et al. 1995)

- Roots of *Bombax ceiba* are used for treating dysentery, diarrhea, and menorrhagia, also useful to relieve from wounds.
- In most of the reports of Ayurveda, Gum of this plant is seems to reduce burning sensation.
- The barks are also effective for treating, influenza, pulmonary tuberculosis and enteritis.
- It has also got Cardioprotective Effect. The Root powder of this plant i.e., *B. ceiba* significantly modifies the coronary risk factors such as atherogenic lipids, fibrinogen and oxidative stress in patients with ischemic heart disease.
- Due to high amount of phenolic and tannin, it has significant impact of antioxidant activity [8-10].
- The flowers of *B. ceiba* showed antioxidant effects and antiproliferative activity against seven human cancer cell lines (Michigan Cancer Foundation-7 [MCF-7]), HeLa Henrietta Lacks), COR-L23, C32, A375, ACHN, and LNCaP cells).
- It contains a large amounts of tannic and gallic acids acting as astringents which precipitate proteins which helpful in restoring the damaged epithelial mucosal lining of the ulcerated mucosa.
- It has also got hepatoprotective activity [11-13]. One of the studies, it was proved that the methanolic extract of flowers of *B. ceiba* causes

significant decrease in alkaline phosphates, alanine transaminases, aspartate transaminases, and total bilirubin levels but increases in the level of total protein in comparison to control

- The alcoholic extract of bark and thorns of *B. ceiba* possess very good anti-acne potential against *Propionibacterium acne* with minimum inhibitory concentration (MIC) of 250 µg/ml.

CONCLUSION

Many Scientific outputs on *B. ceiba* on animal and human studies has a combat efficacy against many diseases [14-16]. Many of the commercially available plant based drugs are result of systematic scientific researches done on *B. ceiba*, has an immense medicinal potential.

Various scientific studies world over have confirmed the scientific impact of various parts of *B. ceiba* for different diseases in man and animal as suggested in folk medicine. It is found that future scientific work may needs techniques to preserve and conserve the species for future use to abet challenges against many infectious diseases.

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