

An Overview Glimpses on *L. speciosa* (Pride of India) of Khurdha, Distt. Of Odisha

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Abstract

L. speciosa, commonly called Pride of India, belongs to tree species have tremendous commercial for ornamental purposes. *Lagerstroemia speciosa*, is a tropical plant spread to many parts of Southeast Asia including the India, Vietnam, Malaysia and southern China. It is a type of deciduous trees which grow in tropical and subtropical areas of the country. The tree is large, three-inch wide, bright pink to lavender blooms appear in dense, foot-long, terminal panicles from June to July, making Queen's Crape-Myrtle on roadside. This deciduous tree is 12-inch-long, dark green, oblong, leathery leaves and become red before falling in winter. It can reach 40 to 60 feet in height. In India, the wood is used for railroad ties and construction. In Philippines, the leaves are used as a treatment for diabetes and kidney disease. Sevearl Scientist reported the use of this plant for insulinlike, hypoglycemic effect.

Keywords: *L. speciosa*, Ornamental Flower, Queen's Crape-Myrtle, Antidiabetic.

Introduction

Taxonomic Illustration

- Kingdom: Plantae
- Phylum: Spermatophyta
- Subphylum: Angiospermae
- Class: Dicotyledonae
- Order: Myrtales
- Family: Lythraceae
- Genus: Lagerstroemia
- Species: Lagerstroemia speciosa

The plant of *Lagerstroemia speciosa* belongs to family Lythraceae which includes 31 genera and approximately 620 species occurring worldwide Members of this family are easily recognized by a suite of characters such as: (1) opposite entire leaves, (2) a persistent, perigynous, campanulate to tubular floral tube with crinkled petals inserted at the rim, (3) two whorls of stamens inserted deep in the tube, and (4) a many-seeded capsular fruit (Graham et al., 2005). Fruit a large woody capsule on the persistent calyx. seeds with an apical wing (Orwa et al., 2009) (Figure 2A). *L. speciosa* is native to temperate and tropical Asia including the Indian subcontinent, China, Cambodia, Myanmar, Thailand, Vietnam, Indonesia, Malaysia, and the Philippines (USDA-ARS, 2017, Vitali-Veiga et al 1999, Khanduri 2014, 2015, Lorenzi et al.,

2003; Broome et al., 2007; David et al., 2009; Orwa et al., 2009, USDA-ARS, 2017). This species has been widely cultivated as ornamental and is now naturalized in tropical regions of Asia and Africa, Australia, Mexico, Central and South America, and the West Indies. The four largest genera are *Cuphea* (250 species), *Nesaea* (80 species), *Diplusodon* (75 species), and *Lagerstroemia* (55 species) and account for three-quarters of all the species in this family (Graham et al., 2005; Graham and Cavalcanti, 2009). The name *Lagerstroemia* recognizes Magnus von Lagerstroem, a Swedish naturalist who provided specimens from the East for Linnaeus. The specific name *speciosa* is a Latin word for showy, referring to the flowers (Orwa et al., 2009).

Collection Site

The Specimen of *Lagerstroemia speciosa* was collected from Khordha Distt. Of Odisha. It is located at Latitude 20° 10' 57.65" N and Longitude 85° 36' 58.64" E (Figure 1). Khordha has high impact of natural heritage. The capital city of Bhubaneswar is located in this district.

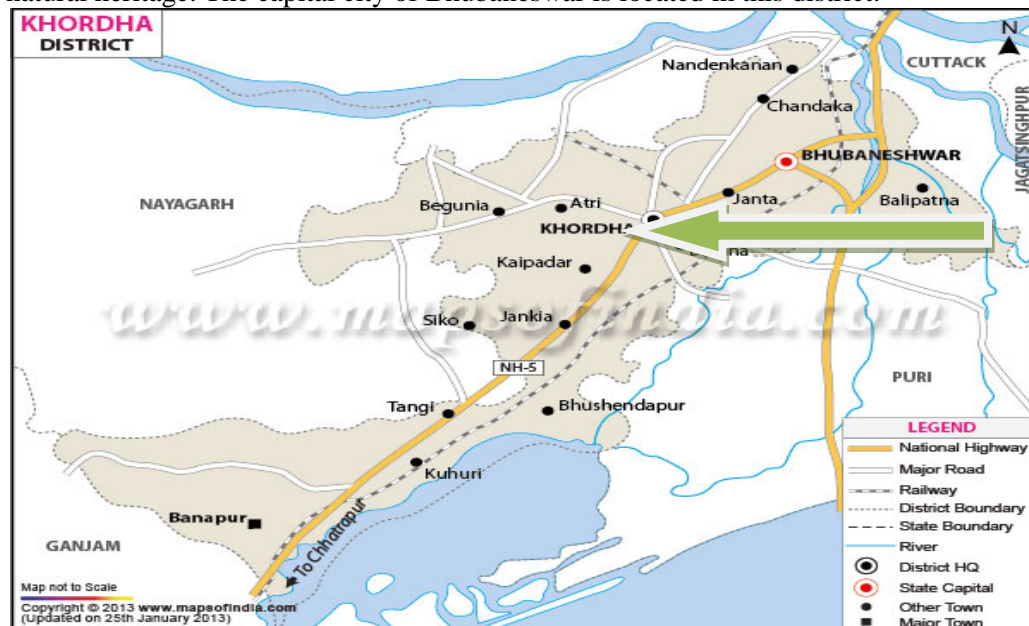


Figure 1. Map with Sample Collection Point (Arrow)

History and Description of Plant

Garcia et al. (1987) first publication has a significant approaches the scientific interest of *Lagerstroemia speciosa* potential for the treatment of diabetes resurfaced. Scientists from countries including Japan, the Philippines, Korea and the United States are currently studying *Lagerstroemia speciosa*. It becomes relatively popular in the form of health-promising tea products in Eastern Asia and the United States. The lavender flowers of *Lagerstroemia speciosa* (Gilman and Watson, 1993; USDA-ARS, 2017), is distributed around parking lots, and along highways (Gilman and Watson, 1993 Orwa et al., 2009). It is a type of shrub to large tree with. Leaves having opposite, distichous, simple, entire, stipules minute or absent (Figure 2A). The bunch of flowers in a large, axillary or terminal panicle, calyx 6(9) lobed, petals, the calyx tube,

white to pink or purple, clawed, wrinkled, stamens many, in several rows, ovary superior, 3-6 locular with many ovules in each cell. The Flower of *L. speciosa* are hermaphroditic comprises of axillary or terminal panicles (Figure 2B). The pollination in flower is done by insects In India. It seems to perennial long-lived tree *L. speciosa* grows in moist habitats with mean annual precipitation ranging from 2000 mm to 2400 mm. The mean annual temperatures are supposed to be 25-28°C. In dry habitats it is often found growing along streams. Soils may vary from well drained to occasionally flooded, but not peat soil. This species is resistant to fire. This species has a wide spreading crown and a dense and widespread root system with the potential to alter soil conditions and inhibit the establishment of native vegetation in the understory.(Figure 2C) Currently it is listed as invasive in Belize, Costa Rica, Puerto Rico and the Virgin Islands (Lim 1985, Paily 1986, Davis 1977). Economic point of view showed *L. speciosa* is used as fertilizer (Watt 1972) and tremendous valuable choice as ornamental plant. In India, *L. speciosa* is consider a “holy tree” and is also used in traditional medicine. The bark is used antidiarrhoea, antimalarial, antidiabetic and urinary problems (Astrup2000, Orwa et al., 2009). It is also used as Invertebrate food for silkworms. Thus it found that it is commercialize for invasive outside its native range having a broad native range and is highly adaptable to different environments. Benefits from human association and reproduces asexually and can Competition -monopolizing resources having hybridization and rooting capacity.





Figure 2A) Leaves of *L. speciosa* **2B):** : The Flower of *L. speciosa* **2C)** Plant alongwith Flower

The phytochemical constituents are discussed by several Scientists. Some phytochemical constituents of *Lagerstroemia Speciosa* includes gallic acid (Figure 3A), 4- hydroxyl benzoic acid (Figure 3B), beta sitosterol, 3,3,4-tri-O-methyl ellagic acid, 3-O-methyl-3,4-methylene-dioxy ellagic acid (Figure 3C) , Asiatic acid (Figure 3D), aliphatic acid (Figure 3E), 3,3¹-di-O-methyl ellagic acid, 3-O-methyl ellagic acid, 6,7-dihydroxy coumarin, alanine, isoleucine, alpha amino butyric acid (Figure 3F), ellagitannin⁷ and methionine.

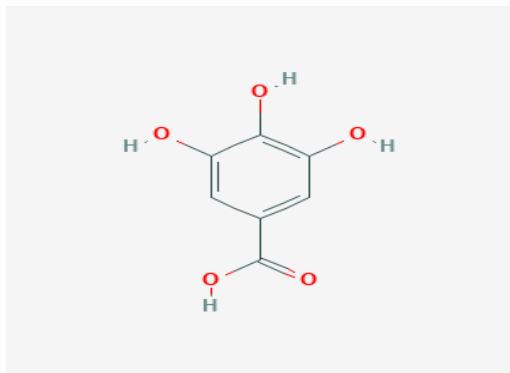


Figure 3A): Gallic Acid

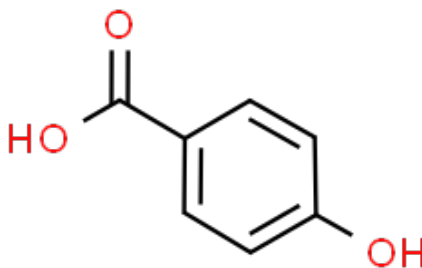


Figure 3B : 4- hydroxyl benzoic acid

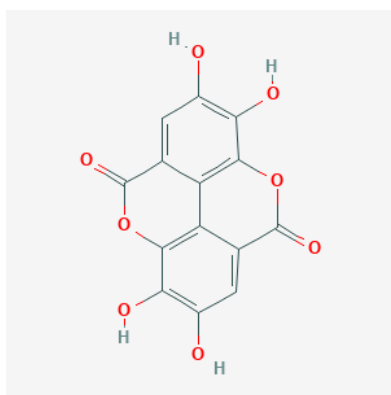


Figure 3C) : ellagic acid

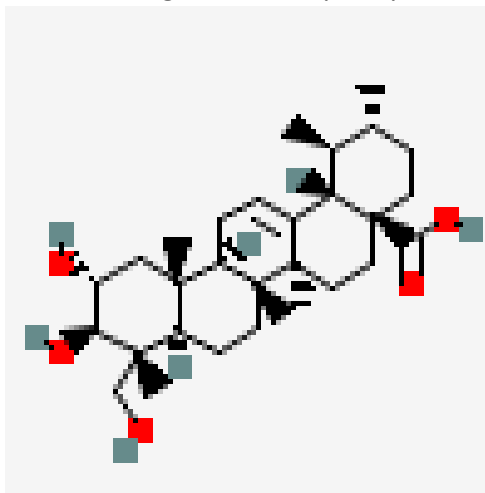


Figure 3D): Asiatic acid,

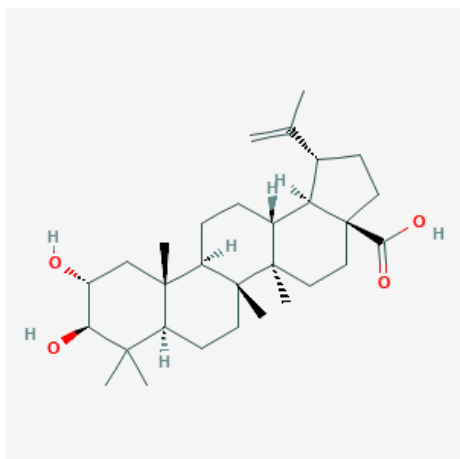


Figure 3E: Alphitolic Acid

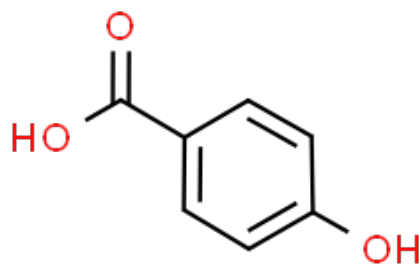


Figure 3F: Alpha amino butyric acid

Conclusion

The overview study illustrated the taxonomic, commercial, pharmacological and biological importance in limited context. The flower extracts of the species has some pharmacological properties like antioxidant and antimicrobial, whereas the extract of fruiting parts have a significant impact as anti-diarrhea. Several Scientific clues reported the role of leaf extracts as anti-bacterial, anti-viral, anti-obesity, anti-diabetic activities. The fresh roots part are applied for treating mouth ulcers. Besides, It also provide some metals like sodium, potassium, iron, zinc and magnesium which were experimentally proved. Thus these reviews will emphasis on the phyto-constituents and biological activities of the plant which will heal and cure mankind for healthy living.

Conflict of Interest

There is no conflict of Interest.

Acknowledgments

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