

Pharmacological effects of *Pterocarpus marsupium*

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Abstract:

Pterocarpus marsupium (PM) (Gammalu in Sinhala) is a member of the *Fabaceae* family. It is a large deciduous tree, indigenous to Sri Lanka, India, and Nepal. Due to its therapeutic benefits, PM is regarded as a medicinal plant in Ayurveda and for industrial products. This narrative review focuses on the pharmacological effects of PM, its' bioactive compounds, biological effects, and toxicity. For this, literature was gathered via Google Scholar (102), PubMed (89), ScienceDirect (22), published books, web pages, and personal communication (13). The remaining literature was selected after the elimination of 14 duplicates. Titles and abstracts were considered, and some studies were excluded due to insufficient data and irrelevance. After this screening, 133 papers were removed. A total of 66 articles were selected by reading the abstracts that report the pharmacological effects of PM. The main keywords used were PM, Gammalu, Indian kino, phytochemicals, antidiabetic, hypoglycaemic, anti-dyslipidaemic, antioxidant, anti-inflammation, anti-diarrhoeal, anti-cataract, and toxicity.

Keywords:

Anti-anaemic, anti-diabetic, anti-inflammatory, anti-oxidant, gammalu, Indian kino, *Pterocarpus marsupium*

Traditional medicine, outside of Western medicine's purview, dates back to the beginning of mankind and uses medicinal plants.^[1] However, the herbal practice is gaining increasing attention mainly in low- and middle-income countries as 80% of them entirely rely on such therapies as their primary form of health care.^[2,3]

The substances found in medicinal plants with therapeutic activity are known as bioactive ingredients.^[1] In traditional practice, these bioactive ingredients are mostly unidentified by the traditional healers even if they differ from plant to plant. Some of the substances found in medicinal plants that have therapeutic significance for the treatment of various ailments include anthraquinones, flavonoids, glycosides, morphine, saponins, tannins, atropine, codeine, steroids, lactones, and oils.^[4] These bioactive ingredients in medicinal

plants have been extracted and used in various forms, such as infusions, syrups, preparations, decoctions, fortified oils, essential oils, ointments, and creams to treat various disease conditions.^[1]

Pterocarpus marsupium (PM) (in Sinhala Gammalu) is one such plant that has been used to treat different diseases with multiple pharmacological activities. The plant, also known as Malabar kino, Indian kino, or gum kino has a long history of use as a medical plant.^[5,6] It is a large deciduous plant native to Sri Lanka, India, and Nepal. It can grow up to 30 m tall as a medium-to-large-sized tree [Figure 1].^[7] The plant is scientifically classified as follows:^[8]

- Family: *Fabaceae*
- Domain: Eukaryota
- Kingdom: *Plantae*
- Subkingdom: *Viridiplantae*
- Phylum: *Magnoliophyta*
- Subphylum: *Euphyllophytina*
- Class: *Magnoliopsida*
- Subclass: *Rosidae*
- Superorder: *Fabanae*

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