

**RARE**

**TAXONOMY AND PHARMACOGNOSTIC  
PROPERTIES OF *Albizia lebbek* AND  
SUBSTITUTE PLANTS IN  
SRI LANKA**

Submitted by

**A. P. Anoma Jayasiri**

B.A.M.S. (Hons), M.Phil (Ayurveda)

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## Abstract

Adulteration of plant material due to the, lack of knowledge in authenticity and less availability, is a great problem in the standardization of herbal products in drug manufacturing industry. Multiuse tropical tree *Albizia lebbek* (AL) is a valuable ingredient in Ayurveda, Siddha and Unani systems of medicine. Socio-economic survey conducted using structured questionnaire revealed the substitution of *A. lebbek* with *Albizia odoratissima* (AO), *Adenanthera pavonina* (AP) and *Samanea saman* (SS) in Sri Lanka. Distribution of *A. lebbek* in Sri Lanka is little known, however the present field studies confirmed the availability in several localities. Plant species were morphologically analyzed and compared the similarity by cluster analysis and a multi access key was constructed to solve the taxonomic ambiguity and accurate identification. Stem bark extracts of the plant species were screened for major phytochemicals and confirmed presence of phenol compounds, phytosteroids, flavonoids, glycosides, tannins and saponins. Extracts were analyzed and compared using Thin Layer Chromatography and High Performance Liquid Chromatography. High total phenolic content was recorded from plant extracts. High antioxidant activity was detected in methanol and aqueous extracts of AL, AO, AP compared to the standard. Further, their high anti-inflammatory activity compared to the standard drug aspirin also observed. Clinically evaluated Dashangalepa topical applicator formulae DL<sub>1</sub>, DL<sub>2</sub>, DL<sub>3</sub> and DL<sub>4</sub> were prepared respectively using AO, AP, SS and AL as an ingredient has shown high effectiveness compared to Rumalaya gel for reducing pain and swelling in osteo-arthritis and rheumatoid arthritis. Findings can be recommended the substitution of AO and AP for AL in drug preparations than SS as it has shown low efficacy.

**Key words:** bark extracts, herbal substitution, drug standardization, arthritis