PHYTOCHEMICAL STUDY OF (CRATAEVA NURVALA) VARUN BARK IN DIFFERENT SEASON

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ABSTRACT
Fractionation of the butanol partitioned aqueous extract of the stem bark of Crataeva nurvala afforded succinic acid, mannitol and lactic acid. The structures of these compounds were elucidated on the basis of spectroscopic methods such as UV, NMR and MS. These compounds were isolated for the first time from the plant and are found to be suitable for use as marker compound for the standardization of the aqueous extract of stem bark of Crataeva nurvala, commercial extract and phytopreparation containing Crataeva nurvala by HPLC method.

KEYWORDS: Crataeva nurvala Ham; succinic acid; mannitol; lactic acid; standardization; marker compound; spectroscopic methods; HPLC.

INTRODUCTION
In Ayurveda there is great importance about collection of different part of plants, to secure the efficiency of drugs. There is indication in samhitas about collection of particular part of a plant in a particular season’. As such barks are indicated to collect during grishma and sharad ritu.

Dravyasangraha or collection of drug has been given importance in the study of dravyagunastra. The dravya should be collected according to the principles or procedures laid down in ayurveda, to achieve the desired medicinal value. In order to denote richness in the inherent quality of the dravya, acharya have given indication of season, during which they should be collected and the specified part to be selected. The dravya which are collected and desired parts selected for medical purpose will contain more virya – potentiality or active principles. There for, it demands more attention towards the collection and selection of the part of grahyabhaga for the better effect.

The medicinal value of the medicinal plants resides in the chemical substances that produce a definite physiological action on the human body and these chemical substances are called phytochemicals. They are the bioactive compounds which are present in the medicinal plants and non-nutritive chemicals which possess protective or disease preventive properties. Since herbal medicines are prepared from materials of plant origin they are prone to contamination, deterioration and variation in composition. Various analytical techniques have been developed for quality control of drugs from plant origin. Therefore it is the need of the hour to undertake phytochemical investigations along with biological screening to understand therapeutic dynamics of medicinal plants. Extraction may be defined as the process in which the animal or plant tissues are treated with specific solvents whereby the medicinally active constituents are dissolved out, cell tissues and most of inactive or inert components remain undissolved. Residue left after extracting the desired constituents is known as marc and solvent used for extraction is known as menstrum. Most commonly, water is used as an extract.

MATERIAL AND METHODS
The literary material will be collected from various available Vedic literature, various available Nighantus, Ayurvedic text, Ayurvedic view from various Samhita’s. Other view or related concept will be collected from Ayurvedic journals, old research work and research articles, etc.

Review Of Literature
A. Phytochemistry
Crataeva nurvala is found to be rich in triperpenoids, saponins, flavonoids, phytosterols, alkaloids and glucosilinates. A wide variety of medicinally important compounds have been reported from C. nurvala. Phytoconstituents like lupeol and its acetate, ceryl alcohol, friedelin, cadabicine, cadabicine diacetate, crataenoside, crataemine, betulinic acid and diosgenin.
have been isolated from the stem bark. Fruits contain glucocapparin, triaccontanol, octanamide, n-pentadecane, 12-tricosanone, friedeline, tricentanol, cetyl and ceryl alcohol. Leaves showed the presence of L-stachydrine, dodecanolic anhydride, methyl pentacosanoate, kaemferol-0-α-D-glucoside and quercitin-3-0-α-D-glucoside. Root bark contains rutin, quercetin, varunol and β-sitosterol.

**General description**

*Crateva nurvala* is a moderate sized deciduous tree. The mature bark is typically 6-15 cm long and 3-10 cm wide with a thickness varying from 5-15 mm. The outer surface of the bark is gray to grayish-brown and rough, due to the presence of several small and rounded lenticels. The inner surface is smooth and whitish-brown to buff colored. Leaves are trifoliate. Flowers are white or cream colored. Fruits have multiple seeds and ovoid berries, 2.5 cm in diameter and seeds are embedded in the yellow, fleshy pulp of the fruits.

**Properties of Varuna**

**Rasa (taste):** Tikta, madhura, kashay  
**Guna (physical property):** Laghu, ruksha  
**Virya (potency):** Ushna  
**Vipaka:** Katu  
**Probhav:** Bhedan (ashmarighna)

**Common names**

Varun, Tiktshaak (Sanskrit), Baruna, Barna (Hindi), Varne, Borun (Bengali), Three-leaved caper (English), Bitusi, Holenekki, Holethumbe, Maavilanga, Mata maavu, Naaram bele, Vitasi, Neervaala mara, Sethu bandhana, Vaayu varuna, Nervaala (Kannada), Nirmatalam,

**CONCLUSION**

The wide range of covering area in respect to therapeutic indication of varuna makes it popular in ayurveda. It is the best moment to give more attention about the other therapeutic indications of varuna apart from lithotriptic and diuretic effect.

**REFERENCES**

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