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## RESEARCH ARTICLE

### VARUNA (*CRATEVA NURVALA* BUCH.-HAM.)- A VALUABLE AYURVEDIC MEDICINAL PLANT OF PRESENT ERA

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#### ABSTRACT

*Varuna* (*Cratevanurvala* Buch.-Ham.) belongs to the family Capparaceae is used therapeutically for various ailments since ancient times. It is considered to be one of the holly and sacred trees in India. *Varuna* has bitter (*Tikta*), astringent (*Kashaya*) taste (*Rasa*), its *Vipaka* is *Katu* with *Ushna Veerya*. It alleviates *Kapha*, *vata* doshas, but aggravates *pitta dosha* mainly due to *ushnaveerya*. *Varuna* is one such plant which is being used in 'Ayurveda' mainly for the management of Urolithiasis (*Ashmarighana*), Diuretic action (*mutrajana*). In deed it has many other actions as well. The review basically emphasize on the documentation of *Varuna* as a whole to have a proper understanding of its action not only in terms of its action on urinary system but also on other areas as well thus providing a comprehensive data for researcher to excel themselves in exploring various aspects of *Varuna* for its therapeutic use.

#### INTRODUCTION

*Varuna* (*Crateva nurvala* Buch.-Ham.) having synonym *C. magna* (Lour.)DC., is a deciduous tree, belonging to the family Capparaceae, found throughout India.<sup>1</sup> It is distributed throughout the river banks of southern India, tropical and sub-tropical countries of the world, wild or cultivated.<sup>2</sup> *Varuna* has no controversies regarding its botanical source. Since ancient times it is considered to be a holly tree where it is considered under the 'shanti vrikshas'. It is commonly grown near the bank of rivers and temples. Also *Varuna* is correlated with Lord Varuna who is 'jaladhipati'-supreme in controlling water. Thereby it can be correlated that *Varuna* may has diuretic action as it has some correlation with Lord Varuna who controls the water in the universe. Therapeutic action reveals that bark is having diuretic action and the whole plant powder is having cholinergic action on smooth muscles including urinary bladder.<sup>3</sup> The juice of the bark is given to the women after childbirth.

#### TAXONOMY AND ETHNOBOTANY

The genus *Crataeva* is named in the honour of greek botanist Crataevus which comprises of around 70 species. Among them *Varuna* (*Crateva nurvala* Buch.-Ham) is having highest bio diversity in India.

Taxonomically *Varuna* (*Crateva nurvala* Buch.-Ham) belongs to kingdom Plantae, Division Magnoliophyta, Phylum Tracheophyta, Class Magnoliopsida, Order brassicales, family Capparaceae. The leaves of the tree are digitately trifoliate i.e three in number and so it is named as 'Tri-parni'. It has a petiole 4-12 cm long with elliptic to lanceolate, acuminate leaf.<sup>4</sup> The flowers are large, polygamous and fragrant whitish to milky white 5-8 cm in diameter. It has dense terminal corymb inflorescence having many flowers wherein the petals are yellow or white, obovate to obtuse. It has numerous purple filamentous stamens. Fruit is berry, ovoid with a woody rind with embedded seeds in yellow pulp. The outer surface of the bark is ash coloured and is rough due to the presence of lenticels.<sup>5</sup> The tree flowers in the month of December –march.<sup>6</sup>

#### MATERIALS AND METHODS

**Source of data:** Literary review and ethomedicinal information was collected from different literatures.

#### DRUG REVIEW

**Historical Aspects:** The references of *Varuna* tree is found in *Vedic* literatures. *Varuna* is a tree which is mentioned in the context of 'Shanti vrikshas' where *Varuna twak* is mainly used for shantikarmas. It is mentioned in *Vedic* literature that *Varuna* is a tree which is used as Paridhi & is used for making several appliances.<sup>7</sup> Amulet which was prepared from this tree should be worn in patients with *Rajyakshama* as it has remarkable medicinal properties.

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Also in *Agnipurana* there are references where *Varuna twak kwatha* is being used for *Ashmari vighaatana*.

### Samhita Era:

**Charaka Samhita:** In *Charaka Samhita*, very few references of *Varuna* are there. But it is mentioned in *Charaka Chikitsa sthana* for treating *Kaphaja gulma* as a *pathya ahara* in the form of *yusha*.<sup>8</sup> [Table no.1]

**Table 1. Varuna in Samhita**

Samhita	Reference	Adhyaya/Shloka	Rogaghanata
Charaka	Chikitsasthana	5/165	Gulma
Sushruta	Chikitsasthana	7/6	Ashmari
	Uttaratantra	59/18,23	Mootrakricha
	Sutra sthana	38/10	Shakavarga
Ashtangahridaya	Uttaratantra	18/23	Karna nada Badhiraya Shola

**Sushrut Samhita:** In *Sushrut Samhita* *Varuna* has been extensively explained in different chapters where in mainly it is used in the context of *Ashmari*<sup>9</sup>, *mootrakricha*<sup>10</sup>, *Antah Vidradhi*. Also its leaves, flowers and fruits are said to be used as *shaaka* as they are described under *shaaka vargas*.<sup>11</sup> [Table no.1]

### Ashtanga Hridaya

In *Ashtanga hridaya*, *Varun* is grouped under *Varunadi gana* having various pharmacopeal actions. The use of *Varuna patra swarasa* for various ailments like *karna naada*, *badhirya*, *shola* etc has been described.<sup>12</sup> [Table no.1]

**Nighantu era** [Table no.2]

**Table 2. Varuna in Nighantu**

S.no.	Nighantu	Useful part of plant	Varga/Shloka	Rogaghanta
1.	Raj nighantu	Leaf Twak Flowers	Prabhadrdivarga/137	Vidradhihara Varahara
2.	Dhanvantrinighantu	-	AmradiVarga/109-110	Vidradhi Krimi
3.	Bhavprakashnighantu	Leaf Twak Flowers	Vatadivarga/64/65	Gulm Krimi Ashmarihara
4.	KidevNighantu	Flowers Fruit	AushadhiVarga/547-550	Mutraghata Hridayavikaranashana

**Table 3. Distinguishing feature to identify substitute and Adulterant**

S.No.	Stem bark	Root bark
1.	Bark pieces are thicker and flat	Bark pieces are thinner & channeled
2.	Outer surface is ash coloured	Outer surface is yellowish
3.	Cork is sclerosed	Cork is not sclerosed
4.	Wood is endarch & pith is present	Wood is exarch & pith is absent
5.	Collenchyma is present	Collenchyma is absent

- ) **Raj nighantu-** *Varuna* 9 synonyms have been explained in *Raj nighantu* alongwith its pharmacopeal actions as *Vidradhihara* and *vatahara* actions<sup>13</sup>.
- ) **Dhanvantri nighantu-** *Varuna* in *Dhanvantri nighantu* has been mentioned in *amradi varga*. Here both *sheeta* and *ushna* qualities of the drug has been mentioned which may attribute to different parts of the plant<sup>14</sup>.
- ) **Shodhala nighantu-** *Varuna* in *Amradi varga* has been mentioned as *Dahashamaka* and *vidradhihara*<sup>15</sup>.

- ) **Bhavprakash nighantu-** It is classified under *vatadi varga* having actions like *sahleshmahara*, *mootrakrichahara* & *vatahara*<sup>16</sup>.
- ) **Kidev Nighantu-** Here *Varuna* has been classified under *Aushadhi Varga* where different qualities of different parts of the plants are explained in detail having *mootraghana* and *grahi* properties<sup>17</sup>.

### Modern Era

- ) **Indian Medicinal Plants**<sup>18</sup>- The Author of this book has mentioned the Action and key applications alongwith dosage, habitat and synonym.
- ) **Data bade on Medicinal plants used in Ayurveda Vol 2-**<sup>19</sup>- Detail explanation regarding *Varuna* has been given in Database such as Family, Vernacular name, morphology, useful part along with pharmacognosy, chemical constituents, pharmacological activity, toxicology and therapeutic evaluation is also explained.
- ) **Indian medicinal plants**<sup>20</sup>- *Varuna* has been mentioned in this book including morphology, properties, part used along with classical references.
- ) **Reviews on Indian medicinal plants**<sup>21</sup>- Description regarding ethnobotanical studies, properties and uses along with pharmacognostical studies, Pharmacological, biological, chemical studies have been explained.

### SYNONYMS OF VARUNA AND ITS INTERPRETATION

Synonyms i.e *Naamaroopa vigyana* has a lot of importance in Ayurveda. They not only indicate the morphology but also reveal the therapeutic utility and sometimes habitat and Pharmacological properties as well. So understanding of synonyms with its through interpretation of synonyms helps us in better understanding of the drug. *Varuna*- Name of God *varuna* who is *Jaladipati*, *Varana*.

It attracts others due to its colour, *Setu*- Mainly grows near river banks, *Tiktashaaka*- It has bitter taste of leaves, *Kumaraka*- The tree always looks young i.e kumar, *Shweta pushpa*- Flowers are white in colour, *Shwetadruma*- it has white coloured bark, *Gandhavriksha*- it emits smell during flowering season, *tamaala*- it's a small tree, *Maarutaapaha*- Alleviates *vaata dosha*, *Urumaana*- It grows very fast, *Shaakadruma*- Leaves are used as vegetables, *Rodhravriksha*- it is a deciduous tree, *saadhuvriksha*- found

mainly near temples, *Ashmarighana*-has lithotropic action, *triparna*- has three leaf, *barahapushpa*- has attractive flowers.

### Vernacular names of *varuna*<sup>22</sup>

**Sanskrit-** *varuna*

**English-** Three leaved caper

**Hindi-** *Barun, barna, bilasi, bila, biliana*

**Bengali-** *Barun, Tikto-shak*

**Gujrati-** *Vayavarna, Varane*

**Kannada-** *Nirvala, Bilapatri, Narumbele*

**Malyalam-** *Nirmatalam, Nirval*

**Marathi-** *Vayavarna, Haravarna*

**Punjabi-** *barna, barnahi*

**Tamil-** *Varanam, Narvala, mavillingam*

**Telgu-** *Vivapatri, Usikmanu*

### PROPERTIES (RASAPANCHAKA)<sup>23</sup>

**Rasa-** *Kashaya, madhura, tikta, katu,*

**Guna-** *Ruksha laghu,,*

**Veerya-** *ushna,*

**Vipaka-** *Madhura*

### FORMULATIONS AND PREPERATIONS

*Varunadi kwatha churna*<sup>24</sup>, *varunadi ghritam, Varunadi tailm*

### DOSES<sup>25</sup>

*Kwatha-* 50-100ml, *Twak churna* -3-6 *Masha*

### SUBSTITUTES<sup>26</sup>

The root bark is mixed with the stem bark of *Varuna* (*Crateva nurvala* Buch-Ham.). The root bark and stem bark can be identified by features in the table listed. (Table No-3)

**CULTIVATION AND PROPAGATION:** It can be propagated by using seeds which can be collected in the month of June to September. The viability of the seeds is upto 10 months. However the seed germination is poor as it takes more than 20 days to germinate.

**PHARMACOLOGICAL ACTIVITIES:** Antinociceptive Effect<sup>27</sup>, Antifertility activity of stem bark<sup>28</sup>, lupeol effect against free radical induced toxicity in experimental urolithiasis<sup>29</sup>, Urolithic property<sup>30</sup>, anti-inflammatory activity<sup>31</sup> were reported.

### DISCUSSION

*Varuna* is an important medicinal plant and its review from various text reveals its usage since *Vedic* period. Its literatures are abundantly found in *Samhitas*, *nighantus* and modern text. The *nighantus* have mentioned different properties of *varuna* according to the useful part as well, where in some *nighantus* have commented *twak* as *mootrala*, *pushpa* as *grahi* and *phala* as *sara & guru*.

The *Rasa panchaka* of *varuna* is *Tikta, Kashaya & Ushna veerya* which can be attributed due to the presence of alkaloids & saponins. Due to these it irritates the urinary system which may bring diuretic action by increasing renal flow.

### CONCLUSION

*Varuna* is an undisputed tree for its identity. Abundant knowledge regarding the therapeutic utility of *varuna* has been mentioned in the text. In present review an attempt was made to gather information regarding *varuna* through *Vedas*, *Samhitas* and *Nighantus* as well as modern text to understand *Varuna* through all aspects in a better way.

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