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### RESEARCH ARTICLE

#### KARUSHKARA LATA (*STRYCHNOS COLUBRINE L.*) – A SNAKEWOOD PLANT.

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#### Abstract

*Karushkara Lata* (*Strychnos colubrine L.*) commonly called as Snakewood Plant is widely distributed throughout Western ghats of India. It is an important medicinal plant of genus *Strychnos*. There are traditional claims for usefulness of the plant as an antidote to snakebite, as a febrifuge, anthelmintic, in cutaneous infection and to check diarrhoea. The major chemical constituent includes strychnine and brucine but very few researches have been conducted so far regarding its pharmacological activities. In *Ayurveda* system of medicine, the plant is mentioned a bitter tonic having *krimighna*, *jwaraghna* and *twakadoshahara* action. So the present review aims to explore the significance of this plant giving a scope for further scientific research.

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#### Introduction:-

*Karushkara Lata* or *Kuchala Lata*, botanically identified as *Strychnos colubrina L.* belongs to the genus *Strychnos*, the largest genus of the family *Loganiaceae*. The genus *Strychnos*, include scandent shrubs or trees, found throughout the tropics and sub-tropics. Nearly 20 species occur in India, of which *Strychnos nuxvomica* is renowned for the drug value of its poisonous alkaloids, strychnine and brucine (Wealth of India)<sup>1</sup>. *Strychnos colubrine L.* is a lofty woody climber particularly distributed in Western peninsula of India. The wood of the root is particularly valued as an antidote to snake bites and so commonly called as Snake Wood Plant. It is considered as a reliable remedy for the bite of the Naga or Cobra, as well as for that of every other venomous snake. It is applied externally, and at the same time given internally. *Karushkara* botanically indicates the plant *Strychnos Nux vomica* whereas *lata* indicates climber. Morphologically, the fruit of *Strychnos colubrine L.* resembles with the fruit of *Strychnos Nux vomica* and so may be one of the reasons suggesting its name as *Karushkara Lata*. In *Sushruta samhita*, a plant name *Anjanaki* is mentioned for *virechana karma* (Purgation therapy) in the treatment of *Pitta arbuda* (tumour) and *Pittodara* (Abdominal disease)<sup>2</sup>. *Dalhana* in this context commented this plant as *Nilini* with its flower occurrence in the *Sharada Ritu* (Sep. - Oct.). *Acharya Priyavrat Sharma* considered this plant as *S. colubrine*, a large climber occurring in Western Ghats of India<sup>3</sup>.

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**Photographs:-***Strychnos colubrine L.***Ayurveda Properties:-****Rasapanchaka:-***Rasa* (taste) – *Tikta* (bitter), *katu* (pungent)*Virya* (potency) – *Ushna* (hot)*Vipaka* (end metabolism) – *Katu* (pungent)*Guna* – *Ruksha* (dry), *laghu* (easy to digest), *tikshna* (fast acting)*Dosha karma* – *Kaphavata shamaka* (Alleviates *kaphavata*)*Karma* (Pharmacological actions) – As mentioned in *Nighantu Adarsha*<sup>4</sup>

- *Dipaniya* (Appetizer)
- *Pachaniya* (Digestant)
- *Katupaushatika* (Bitter tonic)
- *Krimighna* (Anthelmintic)
- *Jwaraghna* (Anti pyretic)
- *Twakadoshahara* (Alleviates skin diseases)

**Vernacular names:-**Sanskrit name - *Karushkar Lata, Anjanaki*Hindi, Bengal - *Kuchilalata*Guj. - *Gogari-ghoghari*Mara - *Gohagarilaakuuda, devakadu, dhavo-khajro, kajarvael, kajarvel*Kon. - *Kaajaravel*Malayalam - *Madura kanjiram, cerukattuvallikanniram, modira-kanniram, modiracaneram, modirakaniram, modirakanni.*Tamil - *Naga malligai*Telugu - *Kausukandira, kavasukandira, konsu-kandira, naagamushti, nagamusadi*Kannada - *Ballikaasaraka, naagaushti, naagamushti*Tamil - *Naga malligai, nagamalligai*Portuguese - *Pao de cobra***Taxonomical Classification:-**

Kingdom : Plantae  
 Division : Tracheophyta  
 Sub division : Angiosperm  
 Class : Magnoliopsida  
 Order : Gentianales  
 Family : Loganiaceae  
 Genus : Strychnos  
 Species : colubrine L.

**Morphology**<sup>5</sup>

A large woody climber; stem of great size, often from eight to twelve inches in diameter; the wood hard, intensely bitter and of a light grey colour; this with its numerous ramification climbs over the highest trees. Bark ash – coloured, more or less scabrous, according to the age and size of the part of the young shoots, smooth and green. Tendrils - lateral, simple, becoming thick and ligneous. Leaves opposite, short petioled, from oval to oblong, entire, obtusely acuminate, triple-nerved; nerves extending to the apex, texture rather thin; glossy; from three to six inches long. Stipules – none. Corymbs – terminal, small; composed of two or three pairs of opposite, few flowered, short, villous branches. Flowers – small, greenish yellow, in a sub ternary order. Bracts – one under each division and sub division of the corymb, tapering villous. Calyx – five parted, clammy with glandular pubescence. Corolla – infundibulam, smooth. Tube cylindric. Border, five parted; segments linear-oblong, spreading. Filaments – five, short, inserted into the mouth of the tube of the corolla under the fissure of its border. Anthers sub-sagittate. Germ – superior, ovate, smooth, two celled with many ovula in each, attached to a fleshy ridge down the middle of the partition. Style the length of the corol. Stigma capitate. Berry often as large as an orange, round, in the advanced state one cell only can be detected. Cortex – rather hard and brittle; colour from a bright yellow to a dirty looking mixture of yellow and rough brown. Pulp gelatinous and yellow. Seeds – two to twelve, orbicular, much flattened as in *Nux vomica*, peltate, nearly an inch broad.

**Flowering & fruiting**<sup>6</sup> – February - July

**Distribution**<sup>7</sup> – West Deccan Peninsula, from the Konkan to Cochin, frequent.

**Ethnomedicinal uses**<sup>8, 1</sup> -

The wood of the root an infallible remedy for the bite of all venomous snake. It is applied externally, and at the same time given internally. It is also given in intermittent fever, in cutaneous affections, and to alleviate the pain and swelling from confluent small pox. In the Konkan, the fresh leaves rubbed into a paste with the kernel of the cashew nut, are applied to suppurating tumours. The bruised fruit is applied to the head in mania, the root rubbed down with pepper is given to check diarrhea. The root boiled with oil is used as liniment for pains in the joints. The root is used in Java as a febrifuge and anthelmintic and also externally in certain skin diseases.

**Part Used** - Stem, leaf, root, fruit

**Dose**<sup>4</sup> - Powder – 62 mg – 186 mg

**Chemical constituents**<sup>1</sup> -

The roots, seeds, bark and wood contain alkaloids (bark 5.54%, wood 0.96% consisting of brucine and strychnine). The latter is present in considerable quantities and the plant should, therefore, be employed with caution for medicinal purposes. Generally, the plant is used in the indigenous medicine for the same purposes as *S. nux-vomica*, beta-sitosterol has been reported in the plant (Chopra *et al.*, I, 593; Wehmer, II, 965; Desai *et al.*, Indian J. Chem., 1967, 5, 523).

**Toxicology**<sup>9</sup> –

The plant contains important chemical constituent, strychnine and brucine. Toxic doses of strychnine for different animals have been reported as follows: horse- 0.192-0.288; ox- 0.192-33.6; pig – 0.0096-0.048; dog – 0.0048-0.0192.

**Propagation**<sup>10</sup> – Seed

**Pharmacological Activity**

**Anthelmintic activity**<sup>11</sup>

The three successive methanol extract of bark of *S. colubrine* L. showed potent anthelmintic activity in *pherithimaposthumawith* 12.33±0.33, 8.00±0.58, 4.33±0.67 as paralysis time and 38.3±3.76, 27.21±2.18, 15.17±1.28 as death time (mean ± S.E.M) for 100 mg/ml, 250mg/ml and 500mg/ml respectively.

**Scope for future researches**

The plant is good bitter tonic and has therapeutic potential in *Pitta arbuda* (tumour) and *Pittodara* (Abdominal disease). Thus it may exert better results in musculo-cutaneous pain, joint pain, nervine debility, *grahani* (mal-absorption syndrome) and other gastrointestinal tract diseases.

Based on its above classical evidence and its folklore uses, future researches can be conducted on

- Anti pyretic activity
- Anti-ulcer activity
- Anti-cancerous activity (GIT cancer- Colon cancer, peptic cancer, pancreatic cancer, etc.)
- Anti-diabetic activity
- Anti microbial activity
- Analgesic & anti-inflammatory activity
- Anti-diarrheal activity
- Neuromuscular activity
- Anti Snake Venom

### Conclusion:-

The present review represented a comprehensive details pertaining to its classical evidence, botanical description, traditional claims, recent studies and scope for further studies. The plant is having immense potential and appears to have a broad spectrum of activity against several ailments. Further studies on this plant should be carried out to explore the other potential use of this plant product.

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