A REVIEW ARTICLE ON STHAVARA VISHA (PLANT POISON) 
LANGALI (GLORIOSA SUPERBA) 

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ABSTRACT

Langali (Gloriosa superba) is an irritant plant poison which is mentioned Sthavara mula Visha in ancient Ayurveda texts. This plant belongs to Liliaceae family. It is elegant; climbing hedge plants grows in Mysore and in low jungles throughout India. Popularly it is known as Kalahari in Hindi and Glory lily in English. This plant is a part of folk medicine from ancient time. Popularly it is used as abortifacient by quacks. Rasshastra texts include this plant in category of mild poisons i.e. called Upavisha. These Upavisha are low in toxic potency. Beside the toxic impact Langali is having therapeutic uses mentioned in Ayurveda. It is used in treatment of external swelling, wounds, Haemorrhoids, Arthritis and many more diseased conditions. Langali also poses forensic importance as it is popularly used for criminal abortion, used as a suicidal agent and accidental poisoning may occur when the tuber of Gloriosa superba is mistaken for sweet potato. This article helps in telling about description of most common Upavisha i.e. Langali, its therapeutic usage, fatal dosage and various toxicological aspects mentioned in Ayurveda science. 

Keywords: Langali, Gloriosasuperba, Sthavara Visha, Plant Poison

INTRODUCTION

Poisons have been classified into two kinds-Sthavara (vegetable and mineral poison) and Jangam(Animal poison) in ancient Ayurveda texts.¹ Inanimate i.e. Vegetable and mineral poisons termed as Sthavara Visha and animate poisons termed as Jangam visha. In Ashtang Hrudaya visha is again classified as natural i.e. Krutrim visha and artificial poison i.e. Akrutrim visha, and Akrutrim visha is again classified as Sthavara and JangamaVisha.² Basic texts of Rasa Shastra also classifies visha based on toxic potency as Visha and Upvisha. Upvisha are considered as less potent as compared to Visha.³ The substances which are not so lethal but produces certain toxic symptoms are categorised under Upvisha.⁴ Langali (Gloriosa superba) is one of the mild poison mentioned in Rasa Shastratexts like Rasendrasar Sangraha⁵, Rasa Ratna Samucchaya,⁶ and Rasatarangini⁷. Langali is an elegant, climbing hedge plat grows in Mysore & in low Jungles throughout India⁸ It is known as Kalahari in Hindi. The glory lily (Gloriosa superba L.) is a vine that blossoms with exotic, patterned flowers. Glory lilies grow in many parts of tropical Africa and Asia, especially India. This spectacular lily is native of Africa and is the national flower of Zimbabwe.⁹ Though Ayurveda and Unani medicine traditions say that glory lilies have medicinal value, all parts of these plants are toxic. This makes them dangerous plants to have in a house or garden with young children or pets. They are considered perennial herbs and climbing vines, with tendrils on the ends of the leaves that allow them to attach them-
selves to support structures as they climb. [10]

**Physical Characteristics:** - [11] This plant Belonging to family Liliaceous is a large, herbaceous, climbing annual. An herbaceous tall glabrous branching climber

Root Stock: -Arched, solid, fleshy white, cylindrical tuber, 15-30cm (length) X 2.5-3.8 cm (diameter), tapering at both the end, bifurcately branched forming 'V-shape, roots fibrous. Stem: -Annual 3-6 mts long, herbaceous, given off from the young tubers.

Leaves: -Sessile or nearly so, 7.5cm to15cm X 2 to 4.5 cm, scattered or opposite. Sometimes arises from the separation of the internodes, ternately whorled, ovate/ lanceolate, acuminate tip ending in a tendril like spiral, base cordate and nerves parallel.

Flowers: -Large axillary, solitary or subcorymbose towards the end of the branches from the nearness of the leaves, remain about 7 days without withering, Pediciles-7.5-15 cm long, the tip is deflexed. Perianth: 6.3cmX8-13cm long, linear lanceolate. With crispy waved margins at first, then turn yellow passing through orange and scarlet to crimson red. Filament: 3.8-4.5cm long, anthers/spreading 13mm long, style-5cm long, and arms about 6mm long. Fruit: Capsule about 2X4.5 cm, linear oblong, three celled.

Seed: Sub-globose: Testa spongy, wing like.

**Taxonomical Classification of Langali** [12]

Kingdom: Plantae
Sub Kingdom: Tracheobiophyta
Division: Magnoliophyta
Sub-Division: Angiospermae
Class: Monocotyledon
Sub-class: Liliidae
Order: liliaceae
Family: Liliaceae
Sub-family: Wurmbeodideae
Genus: Gloriosa
Species: superba

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**TUBERS OF LANGALI/FLOWER OF LANGALI**

**Botanical Name:** Gloriosa superba Linn.

**Botanical Name:** -Gloriosa Superba
Family: -Liliaceae, Rasonkula[13]

**Vernacular Names:** - Synonyms: - Agni shikha, Kaliharika, Garbhanut


**English:** -Climbing-lily, Glory-lily, Tiger’s claw, Creeping-lily, Flame-lily, Gloriosa lily
Malabar Glory [18]


**Hindi:** -Kalahari, [20]
Kathari, Kulhari, Languli, Kaliyari[21]
Telugu:- Adavi-nabhi, Potti
Bangala: -Vishalangaliya,Eshalangal
Marathi: -Khadyanaag,Kal-lavi
Gujarati: -Dudhio,Bacchanaag
Malayalam: - Medoni
Tamil: - Kala
Classification: -
Ayurveda: -Sthavar Visha (Vegetable Poison)
Kanda visha Upa visha
Gana: -Shak varga
Guduchyadu varga
Mishrakadi varga –Upvisha gana
Modern toxicological classification:
-Irritant, Organic Vegetable Poison
-Gastric Irritant Plant
Plant Description: -
Gloriosa superba L. is a perennial climber, extensively scattered in the tropical and sub-tropical parts of the India, including the foothills of Himalayas. This spectacular lily is native of Africa and is the national flower of Zimbabwe. In India, it is widely distributed and is the state flower of Tamil Nadu. Gloriosa derives its name from the word ‘glorious’, which means handsome and superb from the word ‘superb’ means splendid or majestic. The fondness for floral beauty has also placed Gloriosa as a pot plant in gardens. It is known as ‘Malabar glory lily’ in English, ‘Kalihar’ in Hindi, ‘Agnisikha’ in Sanskrit. Earlier than 1980, the tubers were indiscriminately harvested from the wild and utilized for medicinal applications. Because of continuous overexploitation of tubers from wild, the species was on the verge of extinction and was one of the endangered species among the most valued medicinal plants. Until this period, up to 75% of raw material required by pharmacies and drug manufacturers was fulfilled only from wild. Gloriosa superba has been reported to occur naturally in Africa, India and South eastern Asia and distributed widely throughout the tropics. It has natural occurrence through much of tropical Asia including: India, Sri Lanka, Malaysia and Burma. It occurs in thickets, forest edges and boundaries of cultivated areas in warm countries up-to height of 2530 m. In temperate countries, Gloriosa superba is grown as an ornamental in conservatories and greenhouses. Places known for its distribution are Nasik, Ratnagiri, Savanthwadi (Maharashtra); Uttara Kannada, Hassan, Chikmangalur, Coorg, Mysore (Karnataka); Cannanore, Palakkad, Trivandrum (Kerala); Tamil Nadu and Goa. Tamil Nadu has the largest area under glory lily cultivation (up-to 6000 acres) spread over seven districts viz., Karur, Tirupur, Dindigul, Salem, Ariyalur, Perambalur and Nagapattinam and holds monopoly in production of glory lily seeds with an annual production of over 600 -700 tonnes. Gloriosasuperba contains active principle Colchicine which is mainly present in tuberous roots and leaves of plant and so there are the parts which are used for medicinal and other purposes.
Properties: -
Guna- Laghu, Tikshana
Rasa- Katu, Tikta
Virya- Ushna
Vipak- Katu
Prabhav- Garbhapatan
Doshakarma- Kaphavaatshamak
Part Used: -Tuberous root/corm, Leaves
Medicinal Dose: - 1-2 Ratti
Active principle (Chemical composition): - Colchicine, Puteolin,β-siösterol, Isoper- lolyrine, Cornigerine, Bbechuanine, Colchi- camide, Colchicoside etc.
LangaliShodhana (Detoxification / Purification method):-
1] Pieces of Langali tuber soaked in Saindhava and buttermilk for 4 to 5 days. Later washed with hot water & dried. Change the buttermilk every day.
2] Dip the Langali tuber in Cow-urine for 1 day, it will also reduce the toxic potency \[40\].

**Controversial Aspects of Langali: -**
1. Puga.c speciosus having synonym Kebuka is used as a substitute for Langali (Gloriosa Superba).\[41\]
2. Vaidya Bapalalji claims it to be non-poisonous. He quotes that Vagabhata in 'Astanga Hrdaya' has it as Rasayan so it should not be considered as Upavisha. The word Languli which synonym, may be confused with Langali. Even in Amarkosh, he gives synonym for Jalapippali as Langali. Charaka, Sushruta, and Vagabhat have not mentioned the term Langali, latter writers like Bhavprakash gave it. \[42\]
3. Bapalalji reported that by mistake the term Langali or Languli is identified with M.Pruries.Langali without any controversy identified as Gloriosa superba and there is no second opinion over this issue.Languli may be the synonym of kapikacchu, however the name Langula indicates a variety of rice i.e.Sali Dhanya.\[43\]
4. In Charak Smhita Sutrasthan Langalaki is mentioned as a vegetable (shaka). But it is not clear whether Gloriosa leaves are used or costus rhizomes be used.It is possible that the term Langala and Langalakhya are indicative of Costus.It is observed that Costusspeciosus is often used as substitute for Gloriosa Superba in market\[44\].

**Toxic Effects:** \[45\]

The toxicity reported from ingesting colchicine-containing plants has in general been less severe than that reported after overdose with the drug colchicine. Common effects after plant ingestion includes nausea, vomiting, diarrhoea, abdominal pain, tachycardia and chest pain in a series of nearly 50 patients with Gloriosa Superba poisoning, 16% developed chest pain. More severe effects such as hypotension, bradycardia, seizures, bone marrow suppres-

**Common toxic symptoms:** -(Acute poisoning)
- Severe vomiting
- Diarrhoea
- Abdominal pain
- Hypotension
- Respiratory Failure
- Akshep(Convulsions) \[46\]
- Annapala (Burning in GI track)
- Burning in Uterus
- Circulatory embarrassment, collapse and death \[47\]

**Fatal Dose:** \[48\]
Pure colchicine-7 to 60 mg
Tubers of Langali- 2.5 to 5 gm.

**Forensic Significance of Plant:** -
- Accidental poisoning may occur when the tuber of Gloriosa Superba is mistaken for sweet potato.
- Generally used as abortifacient. \[49\]
- Used as suicidal. \[50\]

**Medicinal uses:** -
1. It is used as appetizer in medicinal dose, skin disorders, scorpion & snake venom, Leprosy, Haemorrhoids, & in worm infestations. \[51\]
2. Root of this plant is used as an ingredient in many Ayurveda classical formulations and indicated for various clinical conditions such as, Shotha (inflammation / oedema), Vrana (wound), Gandamala (lymphadinitis), Chamaroga (skin diseases), Khalitya (hair loss), Aagnimandya (loss of appetite), Aarsha (piles), Vatavyadhi (joint pain / arthritis) and many others. \[52\]
3. Root of Langali is enlisted as an essential drug, to be kept in delivery room \[53\] and especially indicated in delayed labour and expulsion of placenta. \[54\]
4. In the Indian Systems of Medicine, the tubers are used as tonic, antiperiodic, antihelmintic and against snake bites.
1992, Duke has reported the abortifacient action of the plant rhizome. It is used as poultices to relieve neuralgia, used in topical applications to treat arthritic conditions, swellings of the joints, sprains and dislocations. The tuber is traditionally used for the treatment of bruises and sprains, colic, chronic ulcers, haemorrhoids, cancer, and leprosy and for inducing labour pains. Paste of the tuber is externally applied for parasitic skin diseases. [55]

5. Tubers of herb Gloriosa superba is having significant antimicrobial and anthelminthic activity [56]

6. Bahyashotha (external swelling) Langali mula lepa is indicated [57]

7. It is clearly indicated in Rastarangini that Langali should be always used externally.

8. It is used in treatment of Bhagandar (Fistula) [58]

9. Langalyadi Taila (oil) is indicated as Gandamala (Mumps)nashak [59]

Other Uses: - [60]

- The juice from leaves is used as pediculicide i.e. to kill head lice.
- Root is used to treat various ailments in folk medicines.

Medicinal preparations: -

- Kasisadi Taila
- Langali Rasayana [61]
- Langalyadivati [62]

DISCUSSION

Since India is a tropical country, it is host to rich and varied flora of thousands of plants, some of which are extremely poisonous. Most people in ruler areas depend for their food upon farms and gardens. Cases of accidental poisoning occur not infrequently due to mistaken ingestion of toxic plant products or contamination of food stuffs. Some cases are related to intake of harmful herbal remedies and traditional medicines. A substantial number of cases involve children for whom plants are accessible and attractive. Langali (Gloriosa Superba) is one of such plant which is commonly found in many parts of India. Besides the poisonous properties it is a well-known drug with therapeutic uses in Indian system of medicine. It is included among the Irritant, Organic Vegetable Poison in modern toxicology and Sthavara Mula Visha in Ayurveda toxicological classification. Rasshastra texts include this plant in category of mild poisons i.e. called Upavisha. These Upavisha are low in toxic potency than Visha. Beside the toxic impact Langali is having therapeutic uses mentioned in Ayurveda. It is used in treatment of external swelling, wounds, Haemorrhoids, Arthritis and many more diseased conditions. Langali also poses forensic importance as it is popularly used for criminal abortion, used as a suicidal agent and accidental poisoning may occur when the tuber of Gloriosa superba is mistaken for sweet potato. The juice from leaves is used as pediculicide i.e. to kill head lice and root is used to treat various ailments in folk medicines. Popularly it is used as abortifacient by quacks. It possesses strong abortifacient action so named as Garbhapatini, Garbhanut etc. In ancient Ayurveda texts, Root of Langali is enlisted as an essential drug, to be kept in delivery room and especially indicated in delayed labour and expulsion of placenta. Langali is part of medicinal formulations like Kasisadi Taila, Langali Rasayana and Langalyadivati. Acharya Charaka mentioned that an acute poison can become an excellent drug if it is properly administered, and similarly even a drug, if not properly administered, becomes an acute poison. Likewise, Langali is a plant poison which having the medicinal properties and can be used with the therapeutic intentions for treating diseased conditions.

CONCLUSION

Langali (Gloriosa Superba) mild poison mentioned in Ayurveda and modern toxicol-
Rasshastra texts categorised the plant as mild poison i.e. Upavisha and described its medicinal preparations and other theopoetic uses. It is mentioned as essential drug to be kept in labour room in Charaka Samhita especially indicated in delayed labour and expulsion of placenta. It is a popular abortifacient plant known practiced by quack and accidental poisoning is very common due to frequent availability of it as garden plant; cases involve children for whom plants are accessible and attractive & mistaken for sweet potato.

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