

SNUHI (EUPHORBIA NERIFOLIA LINN.) UPAVISHA – A REVIEW**Dr. Ravindra Anirudha Mirgane***

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ABSTRACT

Ayurveda is an eternal medical science which is integral part of *Atharva veda*. In Ayurveda treatment is basically includes use of the different parts of medicinal plants to cure specific ailments. Ancient *Samhitas* of Ayurveda explained medicinal uses of poisonous plants also. In Ayurveda, *Upavisa* are the group of drugs which were less toxic in nature and not so lethal but produces certain toxic symptoms on consumptions or administration. *Snuhi* is one among the *upavisa* and a well-known plant in Indian system of medicine. **According to Acharya:** *Charaka* even an acute poison become an excellent drug if it is administered properly and similarly, even a drug if not administered properly becomes an acute poison. The drug *snuhi* is employed as an important ingredient of various classical preparations. Present review of *Snuhi* highlights a literature review regarding its vernacular names, synonyms, classification, geographical distributions, external morphology, phytochemistry, ayurvedic properties, pharmacological

action, toxicological aspect, management, medico-legal aspect and therapeutic uses from different *Ayurvedic Samitas*, *Nighantus* and present modern sciences literature, books, peer viewed journals.

KEYWORD: *Snuhi*, *Upavisha*, Therapeutic uses, Toxicological aspect, Pharmacological action, *Ayurvedic* properties.

INTRODUCTION

Medicinal plants are considered as God's gift to human beings in the form of natural medicines. The plant-based remedies are having a crucial role as potential source of

therapeutic aids in health system. Ayurveda is an eternal medical science basically includes use of the different parts of medicinal plants to cure specific illness. Ancient *Samhitas* of Ayurveda explained medicinal uses of poisonous plants also.

Snuhi (*Euphorbia nerifolia* linn), is a well-known medicinal plant in the Indian system of medicine. It has been stated categorically that strong poisons could be the best medicine, if it is used after proper *Shodhana* (Detoxification), in a proper therapeutic dose and formulation. On the contrary a good medicine may affect adversely unless it is used for proper person with proper dose.^[1] *Rasratnasamucchaya* described eleven number of *Upavisha*.^[2] In Ayurvedic literature *Upavisha* are the group of drugs which were less toxic in nature and not so lethal but produce certain toxic symptoms on consumption or administration. They are having less toxic potency.^[3] *Snuhi* is also identified as *Snuhi ksira*, *Sudha ksira*, *Sehunda ksira*, *Snuhi dugda*, *Sudha dugdha* and *Sehunda dugdha*; all these are the synonymous words used in the classics for the milky exudate of '*Euphorbia nerifolia*'.^[4]

Charakacharya mentioned it in *Virechana Dravya* and its twenty *virechana* formulation in *sudha kalpa adhyaya of kalpasthan*.^[5] Its *Rasapachaka* and therapeutic properties are explained in different ayurvedic literatures. Hence, in this article an attempt has been made to collect information regarding *Snuhi* and its pharmacological activities from available classical literatures and previous research articles in a systematic manner, which can be useful in conducting further researches. *Charakacharya* described two varieties, *Alpakantaka*, *Bahukantaka*. *Bahukantaka snuhi* is considered as *Sreshtha* because of its drastic purgatives action latex is useful in preparation of *Ksharsutra* which one of the best medicine in Ayurveda for *Bhagandara*.^[6]

METHODOLOGY

Collection of Data: Data was collected from all the Nighantus, Samhita's and text book of modern toxicology and research articles.

LITERATURE REVIEW

Taxonomical classification of *Euphorbia Nerifolia*^[7]

Kingdom	Plantae
Order	Malphigiales
Family	Euphorbiaceae
Sub-family	Euphorbioideae
Sub-tribe	Euphorbieae

Tribe	Euphorbieae
Genus	Euphorbia
Species	nerifolia
Unranked	Angiosperms

Botanical name: *Euphorbia nerifolia* linn

Family: Euphorbiaceae

Vernacular name^[8]

Sanskrit Name: *Snuhi*

Hindi Name: *Thuhara*

English Name: Common milk hage

Marathi Name: *Nivdunga*

Telugu: *Akujemudu*

Tamil: *Ilaikalli*

Bengali: *Manasa sija*

Arabic: *Jakum*

Synonyms

Considering its external feature, action and properties various synonyms have been used in texts for *Snuhi*.

<i>Snug</i>	<i>Vairakantaka</i>	<i>Asipatra</i>
<i>Snuk</i>	<i>Vajravruksha</i>	<i>Mahataru</i>
<i>Snuhi</i>	<i>Mahavruksha</i>	<i>Kalishidrum</i>
<i>Sudha</i>	<i>Nistrinsh-patraka</i>	<i>Ksheeri</i>
<i>Sehunda</i>	<i>Nanda</i>	<i>Shakhakanta</i>
<i>Guda</i>	<i>Vairadu</i>	<i>Bahushakha</i>
<i>Bahustrava</i>	<i>Sihunda</i>	<i>Vatari</i>
<i>Vairee</i>	<i>Simhatunda</i>	<i>Vyaghranakha</i>
<i>Vairatunda</i>	<i>Bahukshiri</i>	<i>Vairadrum</i>

Classification

	Classification
Modern	Irritant organic vegetative poison
Ayurvedic	<i>Sthavara Upavisha varga</i>
SAMHITA	
<i>Charaka Samhita</i>	<i>Shodhanarthaprayukta Vruksha</i> <i>Tikshanavirechana dravya</i>
<i>Sushruta-Samhita</i>	<i>Shyamadi gana</i> <i>Adhobhagahara dravya</i>
<i>Ashtang-Hrudaya</i>	<i>Virechanakaraka dravya</i> <i>Mushakadi gana</i>

NIGHANTU	
<i>Dhanvantari-Nighantu</i>	<i>Guduchyadi varga</i>
<i>Shodhala-Nighantu</i>	<i>Guduchyadi varga</i>
<i>Madanpala-Nighantu</i>	<i>Abhayadi varga</i>
<i>Kaiyadeva-Nighantu</i>	<i>Aushadhi varga</i>
<i>Raja –Nighantu</i>	<i>Shalmalyadi varga</i>
<i>Bhavaprakasha-Nighantu</i>	<i>Guduchyadi varga</i>
<i>Shaligrama-Nighantu</i>	<i>Guduchyadi varga</i>
<i>Priya Nighantu</i>	<i>Shatapushpadi varga</i>
<i>Nighantu Adarsha</i>	<i>Aamalkyadi varga</i>
OTHER:	
<i>Yogaratanakara</i>	<i>Upavisha</i>
<i>Rasaratnasamucchaya</i>	<i>Dughada-varga</i>

Species^[9]

- *E. nerifolia* linn – Patra Snuhi
- *E. nivulia* Buch - Ham
- *E. antiquorum* Linn – Tridhara Sehunda
- *E. trigona* Haw - Tridhara Sehunda bheda
- *E. royleana* Boiss - Thuhara
- *E. Tirucalli* – Kanda snuhi

Botanical Description

Large succulent shrub or a small tree or which grows upto 6-20 ft high, with jointed, cylindrical or obscurely 5-angled branches bearing short stipule thorns, more or less confluent in vertical or slightly spiral lines. Flowers – yellowish green or greenish yellow in colour. Leaves – fleshy, deciduous, 6-12 in. long. Fruits – tricolcus, consisting appearing three radiating follicles. Seeds – minute like rape seeds.

Flowering and fruiting time – plant becomes leafless during winter. Flowers begin to appear in springs and subsequently plant bears fruits.

Distribution: Plant occurs commonly in rocky ground throughout the Deccan, Peninsula and is often cultivated for hedges in villages throughout India.^[10]

Major chemical constituent^[11]

Latex – Euphol, neri foliol, neriifolene, taraxerol, flavonoids

Part used:^[12] Latex, stem, leaf, root, flower, milk

Ayurvedic properties^[13]

Guna – Laghu, Tikshna, Snigdha,

Rasa – katu

Virya – Ushna,

Vipaka – Katu

Karma – Kapha-vatahara, Dipana, Tikshna virechana, Shodhana, Shophakar, Shoolahar, Vishahara, Vrana shodhana

Fatal Dose: Root Powder: 0.5-1g, Stem Juice: 5-10ml, Milky Latex: 125-50mg.^[14]

Fatal Period: 12hrs.^[14]

Cultivation and Propagation: Euphorbia nerifolia is an easy species to grow that is suited for any well drained soil in full sun. It needs no maintenance. It is more commonly sold as crests that tend to stay leafier longer, but normal forms are ornamental as well and good landscaping Euphorbias for smaller gardens.^[15]

Indications: Vatavyadhi, Gulma, Udara, Shula, Sotha, Arshs, Kushta, Medoroga.

Snuhi- uses

Arsha – turmeric powder mixed with latex of *snuhi* is applied externally

Krmidanta – root of *snuhi* is chewed

Vrana – wounds are cured by applying the steamed leaves of *snuhi* for 5-6 days.

E. antiquorum Linn – *Visha*, *Dooshivisha* and *Sarpa visha*^[16]

Snuhimula churna mixed with black pepper – Scorpion sting, Snake bite and used internally and externally.^[17]

Toxic part – Latex.

Dosage^[18]: Latex – a possible fatal dose is 25-30ml and fatal period is about 3 days. (modi)

Snuhi ksira Shodhana (Purification method)^[19]

2 *pala* (96ml) of *Snuhi ksira* is taken along with 2 *tola* (24ml) of filtered *chinchapatra swarasa* in a clean wide mouthed container. The vessel is placed under sun and dried. When the liquid part dries up, the dry powder obtained is stored in a suitable airtight container as *Suddha suska snuhi ksira* for further therapeutic use.

Snuhi ksira properties: *Suddha snuhi ksira* mitigates *vata dosa* and is useful in *Gulma roga*, *Udara roga*, *Adhmana* and in curing the chronic pile mass. It is also useful in combating influences of *Visa* over body.

Ayurvedic formulations of Snuhi^[20]

Jatyadi varti, *Snuhidugdhadi varti*, *Snuhi Ghruta*, *Jalodarari rasa*. *Mansyadi lepa*, *Sanshodhan ghruta*, *Kasisadi taila*.

Toxic signs and symptoms^[21]

External symptoms: Juice cause vesication when applied to skin, Inflammation involving eyesight when droop into eyes.

Internal symptoms: Latex taken inside, it causes irritation in gastro-intestinal tract, Vomiting, diarrhoea, Burning sensation in abdomen, convulsions, coma.

Pharmacological actions

1. Immunomodulatory Activity^[22]

The Hydro alcoholic extract of *E. nerifolia* possessing significant protection against *E. coli* induced abdominal sepsis, significant increase in total leucocyte count, differential leucocyte counts and phagocytic index were determined. These results indicate Immunomodulatory activity of Hydro alcoholic extract of dried leaves of *E. nerifolia*.

2. Wound healing Activity^[23]

The latex of *E. nerifolia* showed facilitated healing process as evidenced by increase in tensile strength, DNA content, epithelisation and angiogenesis. This indicates wound healing property of *E. nerifolia*.

3. Anti-Bacterial activity^[24]

The phytochemical analysis of leaf extracts of medicinal plant *E. nerifolia* and their antibacterial activities against bacterial isolates *Staphylococcus aureus*, *E. coli*, *Pseudomonas fluorescens* were investigated. The phytochemical analysis revealed the presence of flavonoids, saponin, tannins, cadenoids, phenol, and terpenoids. Maximum activity observed in chloroform extract against *K. pneumonia* (5mm). The water and ethyl acetate extract exhibited very less activity. This research supports the local use of the leaf of plant *E. neriifolia* for wound healing property and other forms of bacterial infections.

4. Hepatoprotective activity^[25]

Papiya Bigoniya et al (2010) investigated the Hepatoprotective activity of saponin fraction isolated from leaf of *E. neriifolia* on CCl₄ induced hepatotoxicity of rats. CCl₄ (5mg/kg) is a hepatotoxic agent which induces per oxidative degeneration of membrane lipids causing hypo perfusion of membrane. They found that SGPT, SGOT, ALP elevates in blood and hepatic glutathione and SOD decreases. This hepatoprotection activity was compared with silymerin a well-known standard hepatoprotectants and they found that *E. Neriifolia* shows good Hepatoprotective property.

5. Anti-inflammatory-Analgesic activity^[26]

The Hydro-alcoholic extract was also evaluated for analgesic action using Eddy's hot plate method and tail-flick method in albino rats. It showed significant reduction in the carrageenan induced paw oedema in rats and analgesic activity evidenced by increase in reaction time by Eddy's hot plate method and tail-flick method in albino rats. Anti-inflammatory activity of latex of petroleum ether fraction of *E. nerifolia* was also investigated by Papaya Bigonia (2010).

Treatment

Wash contact part with running water

Symptomatic treatment –

On ingestion: Gastric lavage with normal saline, Activated charcoal

On contact: Skin - Topical corticosteroids

Eye- Antibiotic eye drops, Tears substitute, IOP (Intra ocular pressure) lowering medication

According to Ayurveda^[27]

For external symptoms: Apply the *lepa* of *termind (chinch)* in cold water on blisters.

For Internal symptoms: Give sugar dissolved in cold water, give buffalo milk with sugar, give *kamdudha* with *mauktik*.

Post Mortem Appearance- Signs of inflammation of contact part, gangrenous patches in the stomach and rotten spleen.

Medico legal importance- Commonly accidental poisoning, Homicidal and suicidal purposes are very rare and used for procuring criminal abortions.

DISCUSSION

Snuhi, the *Upavisha*, is classified under different categories by different Acharyas, according to therapeutic properties. In most of the Nighantus it is taken in *guduchyadi varga*. Synonyms of *Snuhi* indicates its morphological properties, i.e. Plant with straight stem circular in appearance (*Guda*), full of latex (*samantadugdha*), *Vatari* (Balances *vata dosha*) etc. There are different species of *Snuhi* i.e. *Patra Snuhi*, *Tridhara Sehuda*. *Euphorbia Nerifolia* Linn easily cultivated with ample amount for therapeutics because it needs less water, space, efforts, maximum use of *Snuhi* latex for preparation of *Snuhi kshara sutra* in Ayurveda because of it is easily available as per *Yogaratanakara* and *Rasatarangini*, generally *Snuhi ksheera* is used as it is without *Shodhana*. It has various proved pharmacological actions like Immunomodulatory, wound healing, Anti-Bacterial activity, Hepatoprotective activity, Anti-inflammatory, Analgesic, Antioxidant, Diuretic, Antipsychotic Activity It possesses sign and symptoms, Juice cause vesication when applied to skin, Inflammation involving eyesight when drop into eyes on local contact. Latex taken inside, it causes irritation in gastrointestinal tract, Vomiting, diarrhoea, Burning sensation in abdomen, convulsions, coma, internally. *Euphorol* and *Nerifolene* are the major active constituents, *Snuhi Ksheera* used in Ayurveda as *Tikshna Virechana* and latex is useful in preparation of *kshara sutra*, which is one of the best medicines for *Bhagandara* in Ayurveda. Chemically *Euphol* and *Nerifolia*, *Nerifolene* constituted in *Euphorbia Nerifolia*.

CONCLUSION

Poisonous plants which are included in *visha* and *upavisha* category can give quick relief in various diseases with their internal use. If they are used without purification, they may cause harmful effects. Hence poisonous plants should always use after purification with specific purification process. According to Acharya *Charaka* even an acute poison become an excellent drug if it is administered properly and similarly even a drug if not administered properly becomes an acute poison.

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