

A PHARMACOLOGICAL PERSPECTIVE OF AYURVEDIC *UPAVISHA* – *SNUHI* (*EUPHORBIA NERIFOLIA* LINN)

Nishigandha Pradip Jagtap¹, Nilima Wadnerwar²

¹P.G. Scholar, ²Associate Professor;

Department of Agadtantra, Mahatma Gandhi Ayurvedic College, Hospital and Research Centre, Salod (H) Wardha, Maharashtra, India

Email: nishigandha.jagtap@rediffmail.com

Published online: September, 2019

© International Ayurvedic Medical Journal, India 2019

ABSTRACT

Snuhi (*Euphorbia nerifolia* Linn) is herb extensively used in the Indian system of medicine. As a traditional medicine, the plant is useful in abdominal trouble, bronchitis, tumor, leukoderma, anemia, and piles. The milky latex is used to remove warts, expectorant, purgative. When we get in contact with latex it can causes symptoms like, formation of blisters or if it gets in contact with eye causes conjunctivitis or loss of vision. If it is taken internally, it causes irritation in GI tract, diarrhea, vomiting etc. It contains Euphol, Nerifolene, Euphorol etc. The present article highlights overall information about the plant *Snuhi*, its therapeutic uses, toxicological aspect, management, medico-legal aspect and classical references of *snuhi* in different Ayurvedic literatures.

Keywords: *Snuhi*, *Snuhi-ksheera*, Toxic symptoms, Chemical constitution

INTRODUCTION

Snuhi and its compound formulations are widely used in Ayurvedic classics to treat vitiated conditions. The flower is yellowish green in color; it is found all over the India. *Snuhi* is a large branched, erect, glabrous, xerophytic shrub occurring wild on rocky ground throughout central India and extensively grown as a hedge plant⁽¹⁾. Rasaratnasamucchaya mentioned eleven types of *Upavisha*⁽²⁾ and *Snuhi* is one among them. *Upavisha* are the group of drugs which were less toxic in nature and not so lethal but produce certain toxic symptoms on consumption. *Upavisha* are the substances, which exert toxic effects on the body. But not

quick action, Charakacharya mention, acute poison becomes an excellent drug if it is administered properly and vice-versa⁽³⁾

Charakacharya mentioned it in *Virechana Dravya* and its twenty *Virechana* formulations in *Sudha kalpa Adhyaya of Kalpasthan*⁽⁴⁾. It's *Rasapanchaka* 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 *Sreshta* because of its drastic purgative action. Latex is useful in preparation of *Ksharsutra* which is one of the best medicines in Ayurved for *Bhagandara* ⁽⁵⁾.

METHODOLOGY:

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

Observation and Result : ⁽⁶⁾ Taxonomical classification of *Euphorbia Nerifolia* is follow:

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.

• **Vernacular Name** ⁽⁷⁾

Sanskrit Name: *Snuhi*

Hindi Name: *Thuhara*

English Name: Common Milk Hedge

Marathi Name: *Nivdunga*

Telgu Name: *Akujemuda*

Arabic Name: *Jakum*

Table 1: Classification

| Sr.No | Samhita | Classification |
|-------|-------------------------------|--|
| 1 | Modern | Irritant organic vegetative poison ⁽⁸⁾ |
| 2 | <i>Ayurvedic</i> | <i>Sthavara Upavisha varga</i> . ⁽⁹⁾ |
| 3 | <i>Charaka-Samhita</i> | <i>Shodhanarthaprayukta Vruksha</i> ⁽¹⁰⁾ <i>Tikshanavirechana dravya</i> ⁽¹¹⁾ |
| 4 | <i>Sushruta-Samhita</i> | <i>Shyamadi gana</i> ⁽¹²⁾ <i>Adhobhagahara dravya</i> ⁽¹³⁾ |
| 5 | <i>Ashtang-Hrudaya</i> | <i>Virechanakaraka dravya</i> ⁽¹⁴⁾ <i>Mushakadi gana</i> ⁽¹⁵⁾ |
| | NIGHANTU | |
| 6 | <i>Dhanvantari-Nighantu</i> | <i>Guduchyadi varga</i> ⁽¹⁶⁾ |
| 7 | <i>Shodhala-Nighantu</i> | <i>Guduchyadi varga</i> ⁽¹⁷⁾ |
| 8 | <i>Madanpala-Nighantu</i> | <i>Abhayadi varga</i> ⁽¹⁸⁾ |
| 9 | <i>Kaiyadeva-Nighantu</i> | <i>Aushadhi varga</i> ⁽¹⁹⁾ |
| 10 | <i>Raja –Nighantu</i> | <i>Shalmalyadi varga</i> ⁽²⁰⁾ |
| 11 | <i>Bhavaprakasha-Nighantu</i> | <i>Guduchyadi varga</i> ⁽²¹⁾ |
| 12 | <i>Shaligrama-Nighantu</i> | <i>Guduchyadi varga</i> ⁽²²⁾ |
| 13 | <i>Priya Nighantu</i> | <i>Shatapushpadi varga</i> ⁽²³⁾ |
| 14 | <i>Nighantu Adarsha</i> | <i>Aamalkyadi varga</i> ⁽²⁴⁾ |
| | OTHER: | |
| 13 | <i>Yogaratanakara</i> | <i>Upavisha</i> ⁽²⁵⁾ |
| 14 | <i>Rasaratnasamucchaya</i> | <i>Dughada-varga</i> ⁽²⁶⁾ |

Table 2: Paryayi Nam:

| Synonyms | Ch. Su. ^(10,11,12,13) | Amar-kosh. | Dha. Ni. ⁽¹⁶⁾ | Sho. Ni. ⁽¹⁷⁾ | Ma. Ni. ⁽¹⁸⁾ | Kai. Ni. ⁽¹⁹⁾ | Ra. Ni. ⁽²⁰⁾ | Bha. Ni. ⁽²¹⁾ | Pri. Ni. ⁽²³⁾ |
|--------------------------|----------------------------------|------------|--------------------------|--------------------------|-------------------------|--------------------------|-------------------------|--------------------------|--------------------------|
| <i>Snug</i> | + | - | - | - | - | + | - | - | - |
| <i>Snuk</i> | - | + | + | + | - | - | + | + | - |
| <i>Snuhi</i> | - | - | + | - | + | + | + | + | + |
| <i>Sudha</i> | + | - | - | + | - | + | + | + | + |
| <i>Sehunda</i> | - | - | + | + | + | + | + | + | + |
| <i>Guda</i> | + | + | + | + | - | + | + | + | - |
| <i>Bahustrava</i> | - | - | - | + | - | + | - | - | - |
| <i>Vajree</i> | - | - | - | - | + | + | - | + | - |
| <i>Vajratunda</i> | - | - | - | - | + | + | - | - | - |
| <i>Vajrakantaka</i> | - | - | + | + | + | + | + | - | - |
| <i>Vajravruksha</i> | - | - | - | + | - | - | + | - | + |
| <i>Mahavruksha</i> | + | - | + | + | - | + | + | - | - |
| <i>Nistrinsh-patraka</i> | + | - | + | + | - | + | + | - | - |
| <i>Nanda</i> | + | - | - | - | - | - | - | - | - |
| <i>Vajradu</i> | - | + | - | - | - | - | - | - | - |
| <i>Sihunda</i> | - | + | - | + | - | - | - | - | - |
| <i>Simhatunda</i> | - | - | - | - | - | - | - | + | - |
| <i>Bahukshiri</i> | - | - | - | + | - | - | - | - | - |
| <i>Asipatra</i> | - | - | - | - | + | - | - | - | - |
| <i>Mahataru</i> | - | - | - | - | + | - | - | - | - |
| <i>Kalishidrum</i> | - | - | - | - | - | + | - | - | - |
| <i>Ksheeri</i> | - | - | - | - | - | - | + | - | - |
| <i>Shakhakanta</i> | - | - | - | - | - | - | + | - | - |
| <i>Bahushakha</i> | - | - | - | - | - | - | + | - | - |
| <i>Vatari</i> | - | - | - | - | - | - | + | - | - |
| <i>Vyaghranakha</i> | - | - | - | - | - | - | + | - | - |
| <i>Vajradrum</i> | - | - | - | - | - | - | - | + | - |

The different species are. Nerifolia Linn: Patra Snuhi, E. Nivulia Buch: Ham, Anti quorum Linn: tri-dharasehuda, E. royleana Boiss: thuhara, E. tirucalli: Kanda Snuh⁽²⁷⁾.

Botanical Description: It considers as a small tree or a large shrub which grows Up to 6-20ft height, the flowers are yellowish green in colour, it is found all over the India⁽²⁸⁾.

Active Principle: Euphol, Nerifoliol⁽²⁹⁾.

Fatal Dose: Root Powder: 0.5-1g, Stem Juice: 5-10ml, Milky Latex: 125-50mg⁽³⁰⁾

Fatal Period: 12hrs⁽³⁰⁾.

Chemical Composition: Euphol, Nerifoliol, taraxerol, neriifolione, flavonoids⁽³¹⁾

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⁽³²⁾.

Table 3: Season of Collection of *Snuhi* and Part to be collected According to different Acharya: Comparison Table-^(33, 34, 35)

| Sr. No. | Prayojyanga | Charakokta | Sushruta | Ra.Ni |
|---------|-------------|------------------|----------|----------|
| 1 | Mula | Grishma-Shishira | Pravruta | Shishira |
| 2 | Patra | Varsha-Vasanta | Varsha | Varsha |
| 3 | Pushpa | Yatharitu | — | Vasanta |
| 4 | Twaka | Sharada | Sharada | — |
| 5 | Kshira | Sharada | Hemanta | — |
| 6 | Kaanda | Sharada | — | — |
| 8 | Pushpa | Yatha Rutu | | Vasanta |

Shodhana of Snuhi-Ksheera^(36,37)

Yogaratkara described that *Snuhi-Ksheera* itself is purified; it does not need further purification. However, *Rasa-tarangini* described Two *Pala chinch-*

patra rasa is prepared and *2pala Snuhi ksheera* is added to it. Whole solution is dried in Sun. Dried powder of *Snuhi-Ksheera* is used for preparation.

Table 4: *Rasa-Panchaka* of *Snuhi*:

| Acharya | Rasa | Vipaka | Veerya | Guna | Dosha-ghanta |
|------------------------------|--------------|--------|--------|----------------------------|-------------------|
| Charak ^(10,11) | - | - | - | Tikshna | - |
| Yo.Ra ⁽²⁵⁾ | Katu | Katu | - | Tikshna, Guru | Vata shaman |
| Dha.Ni. ⁽¹⁶⁾ | Tikta | - | Ushna | Guru, Ushna | Kapha vata shaman |
| Sho. Ni. ⁽¹⁷⁾ | - | Katu | - | Sara | - |
| Ma. Ni. ⁽¹⁸⁾ | Katu | Katu | - | Tikshna, Guru | Vata shaman |
| Ra.Ni. ⁽²⁰⁾ | - | - | Ushna | Ushna | Pitta-vata shaman |
| Kai. Ni. ⁽¹⁹⁾ | Tikta-madhur | Madhur | Ushna | Tikshna, Guru, Ushna | Vata-kapha shaman |
| Bha.Pra. Ni. ⁽²¹⁾ | Katu | Katu | Ushna | Tikshna, Guru | Vata-kapha shaman |
| Sha. Ni. ⁽²²⁾ | Katu-Tikta | Katu | Ushna | Tikshna, Guru, Ushna, Sara | Kapha-vata shaman |
| Ni. Ada. ⁽²⁴⁾ | Katu-Tikta | Katu | Ushna | Tikshna, Guru | Kapha-vata shaman |
| Pri. Ni. ⁽²³⁾ | - | - | - | Tikshna | Kapha-vata shaman |

Table 5: *Karma* of *Snuhi*

| Karma | Charak ^(10,11) | Yo. Ra ⁽²⁵⁾ | Dha. Ni. ⁽¹⁶⁾ | Sho. Ni. ⁽¹⁷⁾ | Ma. Ni. ⁽¹⁸⁾ | Kai. Ni. ⁽¹⁹⁾ | Ra. Ni. ⁽²⁰⁾ | Bha. Pra.Ni. ⁽²¹⁾ | Sha. Ni. ⁽²²⁾ | Pri. Ni. ⁽²³⁾ |
|-------------------|---------------------------|------------------------|--------------------------|--------------------------|-------------------------|--------------------------|-------------------------|------------------------------|--------------------------|--------------------------|
| Tikshna Virechaka | + | + | + | + | + | + | + | + | + | + |
| Shodhana | - | - | + | - | - | - | - | - | - | - |
| Shophahara | - | - | - | - | + | - | - | + | + | - |
| Vrana-Shodhana | - | - | + | - | - | - | - | - | - | - |
| Veeshahar | + | - | + | + | + | + | - | + | + | - |
| Shulhara | - | - | - | - | + | + | - | + | - | - |

Table 6: Rogaghnata:

| <i>Rogaghnata</i> | Charaka (10,11) | Yo. Ra. (25) | Dha. Ni. (16) | Sho. Ni. (17) | Ma. Ni. (18) | Kai. Ni. (19) | Ra. Ni. (20) | Bha. Pra.Ni. (21) | Sha. Ni. (22) | Pri. Ni. (23) |
|-------------------|--------------------|-----------------|------------------|------------------|-----------------|------------------|-----------------|----------------------|------------------|------------------|
| <i>Kushta</i> | + | + | - | + | + | + | + | + | + | - |
| <i>Dushivisha</i> | + | - | - | + | + | - | - | + | + | - |
| <i>Shula</i> | - | + | - | - | + | + | - | + | + | - |
| <i>Arsha</i> | - | - | - | - | - | + | - | + | + | - |
| <i>Shoth</i> | - | - | - | - | - | + | - | + | - | - |
| <i>Daha</i> | - | - | - | - | - | - | + | - | - | - |

Table 7: Formulations of Snuhi:

| Sr. No. | Yoga/ Formulation | Rogadhikar / Adhyaya | References |
|---------|----------------------------|------------------------|--------------------|
| 1. | <i>Mansyadi lepa</i> | <i>Kushta chikitsa</i> | <i>Ch.Chi.7/86</i> |
| 2. | <i>Sanshodhan ghrita</i> | <i>Mishrak Adhyaya</i> | Su.Su. 37/16 |
| 3. | <i>Kasisadi taila</i> | <i>Arsha chikitsa</i> | A.H.Chi.8/16 |
| 4. | <i>Dhatumarana kalpana</i> | <i>Vajrya taila</i> | Sha.Sa.Ma9/185 |

Traditional uses of *e. Nerifolia* (38)

The leaf of *E. Nerifolia* is heated and tied over the affected area of pain and inflammation, the fresh juice from the leaf is poured inside the ears to treat earache. The milk latex of *Nerifolia* is applied over warts as part of treatment. Oil processed from the leaf of *Nerifolia* and sesame oil is used for external application to treat joint pain. The paste of the leaf of *E. Nerifolia* is applied over the skin to treat skin diseases.

Toxic signs and symptoms (39)

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, diarrhea, Burning sensation in abdomen, convulsions, coma.

Snuhi poisoning differentiated due to as-Calatropis- Vesication and redness externally, conjunctivitis, internally burning pain in GIT, diarrhea.

Bhilava: Vesication on skin externally, GIT irritation.

Table 8: Pharmacological actions:

Following Pharmacological actions of *Euphorbia Nerifolia* Linn, have been established:

| Sr. No | Pharmacological actions | Observations |
|--------|--|--|
| 1 | Immunomodulatory Activity ^(40,41) | The Hydro alcoholic extract of <i>E. nerifolia</i> possessing significant protection against <i>E. coli</i> 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 <i>E. nerifolia</i> . |
| 2 | Wound healing Activity ⁽⁴²⁾ | The latex of <i>E. nerifolia</i> showed facilitated healing process as evidenced by increase in tensile strength, DNA content, epithelisation and angiogenesis. This indicates wound healing property of <i>E. nerifolia</i> . |
| 3 | Anti-Bacterial activity ⁽⁴³⁾ | The phytochemical analysis of leaf extracts of medicinal plant <i>E. nerifolia</i> and their antibacterial activities against bacterial isolates <i>Staphylococcus aureus</i> , <i>E. coli</i> , <i>Pseudomonas fluroscens</i> were investigated. The phytochemical analysis revealed the presence of flavonoids, saponin, tannins, cadenoids, phenol, and terpenoids. Maximum activity observed in chloroform extract against <i>K. pneu-</i> |

| | | |
|---|--|---|
| | | monia (5mm). The water and ethyl acetate extract exhibited very less activity. This research support the local use of the leaf of plant <i>E. nerifolia</i> for wound healing property and other forms of bacterial infections. |
| 4 | Hepato-protective activity ⁽⁴⁴⁾ | Papiya Bigoniya et al (2010) investigated the Hepatoprotective activity of saponin fraction isolated from leaf of <i>E. nerifolia</i> on CCl ₄ induced hepatotoxicity of rats. CCl ₄ (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 standards hepatoprotectants and they found that <i>E. Nerifolia</i> shows good Hepatoprotective property. |
| 5 | Anti-inflammatory-Analgesic activity ⁽⁴⁵⁾ | 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 <i>E. nerifolia</i> was also investigated by Papaya Bigonia (2010). |

Treatment of poisoning⁽⁴⁶⁾

According to Ayurveda:

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

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

Autopsy findings: Gangrenous patches can be seen in stomach; Spleen is in rotten condition.

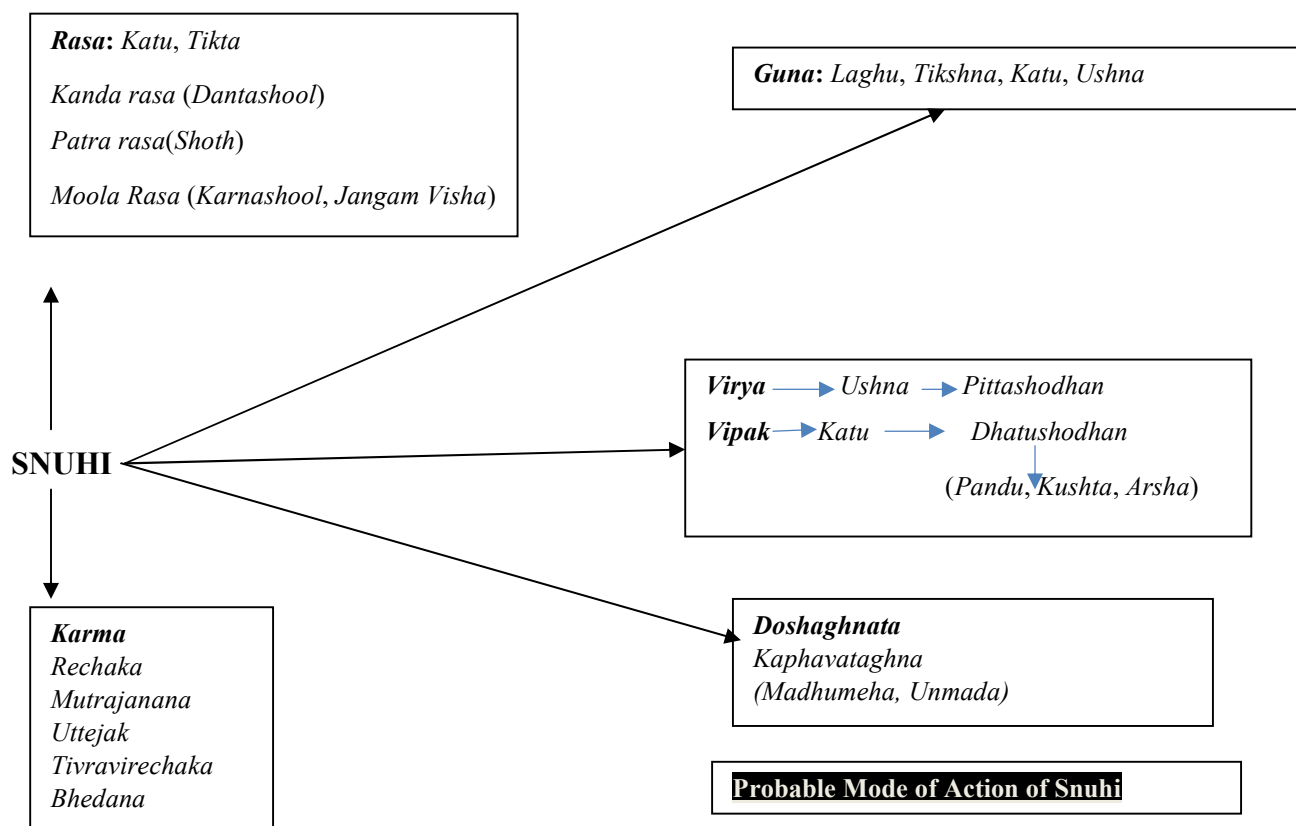
Medico legal Importance: It is used for the purpose of criminal abortion, uses rarely for the homicide; Latex is applied on eyes and genital organs for the punishment of adultery.

DISCUSSION

Snuhi, the *Upavisha*, is classified under different categories by different Acharyas, according to therapeutic properties. Acharya Charak classified *snuhi* in *tikshna Virechana dravya*⁽¹¹⁾, Acharya Sushruta in

shyamadi gana and *adhobhagahara dravya*^(12,13) and Acharya Vagbhata in *mushakadi gana*⁽¹⁵⁾. 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*)⁽¹⁰⁻²³⁾ etc. There are different species of *Snuhi* i.e. *Patra Snuhi*, *Tridhara Sehuda*⁽²⁷⁾. *Euphorbia Nerifolia* Linn easily cultivated with ample amount for therapeutics because it need less water, space, efforts, maximum use of *Snuhi* latex for preparation of *Snuhi kshara sutra* in Ayurveda because of it is easily available⁽³²⁾. Acharya Charak advised collection of *Snuhi-Ksheera* towards the end of *Shishira Rutu*, as it yields very high amount of latex during this session i.e. It is collected in early morning hours, when humidity is high and temperature is low⁽³³⁻³⁵⁾.



As per Yogaratnakara and Rasatarangini, generally *Snuhi ksheera* is used as it is without *Shodhana*⁽³⁶⁻³⁷⁾. It has various proved pharmacological actions like Immunomodulatory, wound healing, Anti-Bacterial activity, Hepatoprotective activity, Anti-inflammatory, Analgesic, Antioxidant, Diuretic, Antipsychotic activity⁽⁴⁰⁻⁴⁵⁾. Different Acharyas described different formulation some of them mostly used for therapeutics, e.g. *Kasisadi taila*. It possesses sign and symptoms, Juice cause vesication when applied to skin, Inflammation involving eyesight when droop into eyes on local contact. Latex taken inside, it causes irritation in gastro-intestinal tract, Vomiting, diarrhea, Burning sensation in abdomen, convulsions, coma, internally⁽³⁹⁾. *Euphorol* and *Nerifolene* are the major active constituents⁽²⁹⁾. *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*⁽³¹⁾.

CONCLUSION

Snuhi can easily be cultivated with ample amount for therapeutic uses because it needs less water, space, efforts. *Snuhi* latex is used mostly for preparation of *Snuhi kshara sutra* in Ayurveda because of its efficacy and easily availability. Considering therapeutic efficacy of *Snuhi ksheera* as *Ksharsutra* for treatment of *Bhagandara*, it is needed in ample amount. From the research study conducted earlier, it can be concluded that for better yield of *Snuhi ksheera*, it should be collected towards the end of *Shishira rutu*, as it yields very high amount of latex during this session. Hence it should be collected in early morning hours, when humidity is high and temperature is low. But to avoid untoward effects of *Snuhi ksheera*, it should be used with due precautions for internal as well as external use.

REFERENCES

1. The Ayurvedic pharmacopoeia of India Part 1. Government of India.part:1, pg no-100.
2. Mishra.S. Rasa ratna sammuchaya (Hindi commentary), Ekontrishoadhyaya, *Visha kalpa*, choukambha orientation varanasi, 1st edition:2011, pg. no-650.
3. Tripathi.D, *Sudha kalpa adhyaya*, Charak Samhita of Agnivesha,10/3-20,2ndpart, Kalpasthana, Choukambha sanskrita Pratishthan Delhi, ed 2012, P-468.
4. Tripathi.D, *Sudha kalpa adhyaya*, Charak Samhita of Agnivesha,10/3-20,2ndpart, Kalpasthana, Choukambha sanskrita Pratishthan Delhi, ed 2012, P-468.
5. Tripathi.D, *Sudha kalpa adhyaya*, Charak Samhita of Agnivesha,10/3-20,2ndpart, Kalpasthana, Choukambha sanskrita Pratishthan Delhi, ed 2012, P-468.
6. Anonymous. en.m.wikipedia.org/wiki/Euphorbia nerifolia.
7. The Ayurvedic Pharmacopoeia of India, Part-1, Volumn-1, First edition printed 1990, Reprinted-2001,Pg.no-100.
8. Naga.A,and et al,A review on upavisha –snuhi (Euphorbia nerifolia linn), International Ayurvedic Medical Journal ISSN:2320 5091, Volume 4; Issue 07; July- 2016, pg no-1232-1234.
9. Naga.A and et al, A review on upavisha –snuhi (Euphorbia nerifolia linn), International Ayurvedic Medical Journal ISSN:2320 5091, Volume 4; Issue 07; July- 2016, pg no-1232-1234.
10. Shastri. D, *Sudha kalpa Adhyaya*, charaka Samhita of Agnivesha, 2ndpart,10/3-20, Kalpasthana, Choukambha sanskrita Pratishthan Delhi, ed 2012, P-468.
11. Shastri.D, *Sudha kalpa adhyaya*, charaka Samhita of Agnivesha, 2ndpart,10/3-20, Kalpasthana, Choukambha Sanskrit Pratishthan Delhi, ed 2012, P-468.
12. Shastri.A, Dravyasangrahaniya adhyaya,Sushruta Samhita of maharshi sushruta english translation, sutrasthana, part:1,38/29, Chaukhamba Sanskrita Sansthana Varanasi; Reprint 2017, page no.185.
13. Shastri.A, Dravyasangrahaniya adhyaya, Sushruta Samhita of maharshi sushruta english translation,sutrasthana, part:1,38/29, Chaukhamba Sanskrita Sansthana Varanasi; Reprint 2017 page no.190.
14. Murthy. K. R, Sudhakalpa-adhyaya,Vol- 2, Kalpasiddhisthana, Vagbhatas Ashtanga-Hridayam, shloka 42-48, Delhi:choukambha krishnadasa academy varanasi,edi:reprinted 2010, page no.546-547.
15. Murthy. K. R, Sudhakalpa- Adhyaya, Vol-2, Kalpasiddhisthana Vagbhatas Ashtanga-Hridayam, shloka42-48, Delhi:choukambha krishnadasa academy varanasi,edi:reprinted 2010, page no.546-547.
16. Sharma P et al,Guduchyadi varga,chapter no:102, Dhanwantari Nighantu, shloka no:226-230, Chaukhambha oiantalis Varanasi Second edition 1998, page no58.
17. Pandey.G, Guduchyadi-Varga,235-Snuhi,Shloka-246, Shodhala-Nighantu, Chaoukambha prakashan varanasi ,edi 1st2009 page no.48.
18. Shastri.J.L.N, Chapterno:01Abhyadi-Varga,Shloka-no:135-136 Madanpal-Nighantu, Chaukhbha Sanskrita Sansthana Varanasi, 1stedi 2012 Pg no:99-100.
19. Sharma P, Kaiyadeva-Nighantu, Aushadhi-Varga,chap no:267, Shloka no:917-920,Chaukhambha Oriantel Varanasi; second edition 2006, page no. 170.
20. Sankhyadhar.S, Cetal, Raja-Nighantu, Shalmalyadi Varga, Sehunda, Shloka-no:49-52, Chaukhambha krishnadas academy Varanasi, edi:1st 2012, pg no-375-376.
21. Singh Amritpal, Bhavmishra bhavprakash Chap-no:03, Guduchyadi-Varga, 3:23:1-Sehunda, shloka no:71-73, Chaukambha oriantation varanasi,1st Edi 2007, page no:87.
22. Khemraj Shrikrushnadas, Shaligram-Nighantubhushanam, Guduchyadi Varga, Snuhinamani, khemraj-shrikrushnadas prakashana; Edi-March2007, pg no.224-226.
23. Sharma P., Priya-Nighantu,Shatapushpadi Varga,chap no:39, Shloka no:68-69, Chaukhmbha Surbharti Prakashan Varanasi; second edition 2004; page no. 87.
24. Vaidya.B., Nighantu-Adarsha,98. Amalkyadi-Varga, 455. Sehunda,vol-2,shloka no:25,Chaukhambha bharti Academy Varanasi Reprint 2005, pg no. 421.
25. Tripathi I, Rasa ratna samuchhaya 10th chapter-mushadi kathanam, Dugdha-varga,,shloka –no:85-86,chaukhambha Sanskrit Sansthan Varanasi, edi:3rd:2006, page no. 117.
26. Shastri. L.commentrator, Yogaratnakara, Hindi translation, Shastri.B., Editor, Athoupavisha,sholka no:01, Chaukhambha Sanskrit Sansthan Varanasi, edi-reprinted, 2008, page no.167.
27. Shastri. J.L.N, Madanpal Nighantu, English-Translation, Abhyadi- Varga,shloka-no:135-136,

- Chaukhbha-Sanskrita Sansthana Varanasi, 1edi 2012 Pg no:78-79.
28. Shastry. J.L.N, Abhyadi Varga, Madanpal-Nighantu, shloka no:135-136, Chaukhbha Sanskrita Sansthana Varanasi, 1edi 2012 Pg no:78-79.
29. Naga.A et al, A review on upavisha – Snuhi (*Euphorbia nerifolia* linn) Volume 4, International Ayurvedic Medical Journal Issue 07; July- 2016, pg. no-1232-1234.
30. Naga.A et al, A review on upavisha – Snuhi (*Euphorbia nerifolia* linn) Volume 4, International Ayurvedic Medical Journal Issue 07; July- 2016, pg. no-1232-1234.
31. Naga. A et al, A review on upavisha – Snuhi (*Euphorbia nerifolia* linn) Volume 4, International Ayurvedic Medical Journal Issue 07; July- 2016, pg. no-1232-1234.
32. Anany-mous. www.llifl.com/Encyclopedia/succulents/family/Euphorbiaceae/26986/Eu_nerifolia_f_cristata.
33. Tripathi.R., Charak Samhita of Agnivesha, Chapter no:10 Sudha kalpa Adhyaya 2nd part, Kalpasthan, Shloka no:3-20, Choukambha Sanskrit Pratishthan Delhi, ed2012, Pg-468.
34. Sharma. P. Sushrut-Samhita of Maharshi Sushruta, Chapter-no:36, Bhumi pravibhagiya-Adhyaya, Hindi-translation, Shloka-no:05, sutrashtana, Varanasi: Chaukhamba-Surbharati Prakashan; Reprint 2012, vol 1, Page No.286.
35. Sankhyadhar. S. Cetal, Raja-Nighantu, Shalmalyadi-Varga, Sehunda, Shloka-no:49-52, Chaukhambha krishnadas academy Varanasi, edi:1st 2012, pg no-375-376.
36. Shastri. L. commentator-Shastri.B., Editor, Yogaratnakara, Hindi translation, Athoupavisha, shloka no:01, Chaukhambha Sanskrit Sansthan Varanasi, edi-reprinted, 2008, page no.167.
37. Sharma. S, Rasatarangini, 24th chapter, vishopvishaniya Adhyaya, Snuhikshirasya-shodhanam, Shloka no:517-518, Chaukhambha sanskrit Sansthana Varanasi, edi:11th 1979, page no. 744.
38. Shaikh. A, et al, *Euphorbia Nerifolia* linn: a phytopharmacological review, International research journal of pharmacy, article received on 17/03/2011, revised on 19/04/2011 and approved on 11/05/2011, pg no:41-48.
39. Prasad. P.V., Text book of Agadatantra, chap no: 09, Upavisha, Snuhi.8, Choukambha sanskrit prakashana varanasi, edi:2nd 2013, pg no:276.
40. Shaikh Arshad Ahemad et al, *Euphorbia Nerifolia* linn: a phytopharmacological review, International research journal of pharmacy, article received on 17/03/2011, revised on 19/04/2011 and approved on 11/05/2011, pg no:41-48.
41. Kalpesh Gaur, Rana AC et al, Investigation of Immunomodulatory potential of *Euphorbia nerifolia* Linn. Against Betamethasone Induced Immunosuppression; International Journal of Pharmacognosy and Phytochemical Research, September-November, 2009, Vol 1, Issue 1, pg. no:8-11.
42. Rasik. A.M, et al, wound healing activity of latex of *Euphorbia Nerifolia* linn, Indian Journal of Pharmacology, Accepted for publication: March 15, 1996, 107-109.
43. Kumara swami M et al, Phytochemical and antimicrobial studies of leaf extract of *Euphorbia Nerifolia*, Journal of Medicinal Plants Research Vol. 5, 30 October, 2011, Accepted 19 September, 2011, pp. 5785-5788.
44. Bigoniya. P et al, Protective effect of *Euphorbia Nerifolia* Saponin fraction on CCl₄-induced acute hepatotoxicity, African Journal of Biotechnology Vol. 9(42), Accepted 13 August, 2010, pp. 7148-7156.
45. Gaur Kalpesh et al, Anti-inflammatory and Analgesic activity of Hydro-Alcoholic Leaves Extract of *Euphorbia Neriifolia* linn, Asian Journal of Pharmaceutical and Clinical Research, Volume 2, Issue 1, January-March, 2009, pp:26-30.
46. Naga Aruna et al, A Review on Upavisha Snuhi (*Euphorbia Nerifolia* linn), International Ayurvedic Medical Journal ISSN:2320 5091, Volume 4; Issue 07; July- 2016, pg:1232-1234.

Source of Support: Nil

Conflict Of Interest: None Declared

How to cite this URL: Nishigandha Pradip Jagtap & Nilima Wadnerwar: A Pharmacological Perspective Of Ayurvedic Upavisha – Snuhi (*Euphorbia Nerifolia* Linn). International Ayurvedic Medical Journal {online} 2019 {cited September, 2019} Available from: http://www.iamj.in/posts/images/upload/1958_1966.pdf