



## Review Article

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### INSIGHT OF BIDA LAVANA WITH ITS SPECIAL REFERENCE TO ITS STANDARD MANUFACTURING PROCEDURE: A REVIEW

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#### ABSTRACT

There are five different types of Lavana mentioned in various texts of Ayurveda. Among them, "Bida Lavana" is one of them. It is mentioned among Lavana Panchaka in some of the texts of Rasashastra. Chemically it is identified as Ammonium Chloride, (NH<sub>4</sub>Cl). It is an artificial Lavana that is prepared by mixing Amalaki and Romaka Lavana which is mentioned in Rasa Tarangini. In Rasa Jala Nidhi, it is mentioned to mix the Romaka Lavana, Haritaki, Amalaki and Svarjika Kshara to prepare Bida Lavana. It has a greyish-white color and having crystalline nature. It has properties like Ruchikara (sensitizes taste buds), Tikshnata (Sharp), Ushna (Hot), Suksma (ability to enter into minute channels of the body) Laghu (light to digest) and Agnidipaka (good appetizer). It possesses Kshariya Rasa (alkaline taste).

**Keywords:** Lavana Panchaka, Rasashastra, Bida Lavana, X-ray fluorescence, Energy Dispersive X-ray Analysis, Romaka Lavana.

#### INTRODUCTION

Salts are important groups of drugs used in Ayurvedic Formulations, to treat different kinds of diseases like Ajeerna (indigestion), mobilizing 'Kapha' from upper parts of the body and it does Vata Anuloman, Anaha (constipation/suppression of natural urges), Vistambha, Shula (abdominal pain), Grahani (malabsorption syndrome) and Hridayaroga (heart diseases). It also mitigates the vitiated Vata Dosha. There are different combinations of salts named Lavana Dwaya, Lavana Traya, Lavana Panchaka, etc. containing two, three and five types of salts respectively.

Lavana Panchaka is most commonly used in the field of Rasashastra. This includes Saindhava Lavana (rock salt), Sourvchala Lavana (Black salt), Bida Lavana (Type of salt with Ammonium Chloride), Oudbhida Lavana (salt from the earth), Samudra Lavana (sea salt) according to some Acharya. Some of them include different types of Lavana in Lavana Panchaka. There are certain formulations containing larger quantities of salt in classics like Lavana Bhaskara Churna, Shankha Vati, Shankha Drava, etc. There are different synonyms Bida Lavana mentioned in some of books such as Vida, Kritrimaka, Supakya, Dravida, Asura, Vita, Dhurta and Kritaka. Bida Lavana is Ruchikarka (adds to the taste) and possesses Tikshna (sharp) and Ushna (hot) properties. It is Sukshma (can enter the minute channels of the body). It is Laghu (light to digest) and Agnidipaka (Good appetizer). It possesses an Alkaline Taste. Bida Lavana is generally considered as Ammonium Chloride but opines it to contain Sodium chloride.<sup>1</sup>

There are different methods of preparation Bida Lavana mentioned in different texts of Rasashastra. Some of them are mentioned below

#### According to Rasa Tarangini

##### Sanskrit verse

vidam krutrimakanchaiv supakyam dravidantatha |  
aasuranch vitanchaath dhurtanch  
krutakam matam ||140 ||

**Explanation:** In these texts of Rasashastra, different kinds of synonyms are mentioned such as Vida, Kritrimaka, Supakya, Dravida, Asura, Viṭa, Dhurta and Kritaka, etc. This salt is not naturally available like that of 'Samudra Lavaṇa'. It is a salt that is prepared artificially. Therefore, it is called as 'Kritrimaka' or 'Kritaka'."

##### Sanskrit verse

vidam ruchyanch tikshoshnam suksmam laghu ch  
dipanam|  
Saksharam hrudyanurdhvaadhah  
kaphavatanulomanam||141||  
ajirnanahavishtambaharam shulvibandhajit |  
hrudgaauravaprashamanam vatagnanch  
prakirtitam ||1 42 ||

**Explanation:** Different properties of Bida Lavana are given, such as Ruchikara (adds taste), possesses Tikshna (sharp) and Ushna (hot) properties. It is Sukshma (can enter the minute channel of the body). It is Laghu (lighter) and Agnidipaka (Good Appetizer). It possesses Kshariya Rasa (Alkaline taste). Its internal use helps in Mobilizing Kapha from the upper part of the body and it does Vata- Anulomana. It is beneficial in Ajeerna, Anaha, Vistambha, Shula, Vibandha and Hridya Roga. It mitigates the vitiated Vata Dosha."

### First Method of Preparation

Romaka Lavana – 28 Sera (2.2 kg.)  
Dry Amalaki Churna – 50 Tolas (600 g.)

The above-mentioned ingredients are taken in the stated amount. Romaka Lavana is taken in a Khalva Yantra and grinded until a proper powder is prepared. This powder is mixed with Amalaki powder and grinded until a homogenous mixture is prepared. After this, a mud pot with a narrow mouth and durable strength is taken. This pot is covered with seven layers of mud-smeared cloth (Mrita Vastra Lepa). These layers are applied one after another (after the previous one has completely dried).

The quarter part of the drug mixture is filled in the pot, and it is exposed to intense heat for the duration of 2 hours. The remaining amount of the drug mixture is added to the pot (gradually in small amounts at some time intervals) when the base of the pot becomes red hot. After this, heating is continued for another 6 hours. During this time period, the temperature should be maintained between 800<sup>0</sup> C to 1000<sup>0</sup> C. The vessel should be kept for shelf cooling after the heating is stopped.

The drug material in the pot is then collected and stored in an appropriate container such as Bida Lavana. The final quantity obtained is only 24 Sera (1.9 kg). This reduction in quantity occurs because the water content of Romaka Lavana evaporates, and the Amalaki Churna completely burns off due to the high heat. As a result, the end product is less in volume. Nevertheless, this Bida Lavana is suitable for use in all pharmaceutical preparations.

### Second Method of Preparation

Romaka Lavana - 80 Tola (960 g.)  
Dry Amalaki Churna - 10 Tola (120 g.)

The two drugs are measured in specific quantities. Romaka Lavana is placed in a larger, clean Khalva Yantra and thoroughly triturated. It is then mixed with the dry, fine powder of Amalaki and triturated further to create a uniform mixture. A strong, narrow-mouthed mud pot is chosen, and its surface is covered with seven layers of cloth smeared with mud (Mrita Vastra Lepa). Each new layer of mud-smeared cloth is applied only after the previous layer has dried. The pot is then placed at the centre of a heating setup, where coal is used as fuel. The coal is ignited, and the temperature is increased by blowing air with a fan.

In this pot, the drug mixture is subjected to intense heat for six hours (equivalent to 2 Yama), maintaining a temperature between 800°C to 1000°C. Once the pot cools down naturally, the drug material inside is collected. The resulting product typically consists of Greyish-White Crystals, which are stored in a suitable container, preferably made of glass or clay, as Bida Lavana.<sup>2</sup>

### Manufacturing of Bida Lavana by Modern Method

Bida Lavana was synthesized using one-fifth of the proportions specified earlier. The ingredients included 2 Tola (24 g.) of Amalaki Churna and 16 Tola (192 g.) of Saindhava Lavana. However, during the process of sourcing the salts, the identity of Romaka/Sambhar Lavana could not be confirmed. The identity of Romaka Lavana was established through pure sources and XRF methods. Consequently, instead of Romaka Lavana, its equivalent, Abhav/Prantiniidhi Dravya, was used as Saindhava Lavana, as referenced in Yogaratnakar – Abhaava Varga.

“Ruchakaabhavato dadyal lavanam pansupwookakam ।  
Lavanambhavech saaaivam tatra diyate ॥12॥“  
Yogaratnakar – Abhaava varga

### Findings from the Pervious Studies

**XRF Study:** XRF (X-ray fluorescence) is a non-destructive analytical method that determines the elemental composition of materials. This technique measures the fluorescent X-rays emitted from a sample when it is excited by a primary X-ray source. Each element produces a unique set of fluorescent X-rays, making XRF spectroscopy a valuable tool for qualitative and quantitative material composition analysis. An XRF analysis was performed on all the salts obtained from the market. After synthesizing Bida Lavana using the modified method with Saindhav Lavana, the resulting product was analyzed through XRF.

**Outcome:** Chemical analysis of Bida salt from prior studies revealed the following composition: Sodium Chloride (NaCl) constituted 93.77% w/w, while total sulfide (Na<sub>2</sub>S) was 0.121% w/w, and iron (Fe) was present at 0.0089% w/w. SiO<sub>2</sub> was detected in all salts, except for the market-bought Romak Lavana. K<sub>2</sub>O was found in all samples except for Samudra Lavana. NiO was present in both Saindhava Lavana and the synthesized Bida Lavana. SrO was absent in both Samudra and Sauvarchala Lavana. Additionally, BaO, ZrO<sub>2</sub>, and As<sub>2</sub>O<sub>3</sub> were only found in the commercially sourced Bida Lavana, while TiO<sub>2</sub> was detected in all types of Lavana except the synthesized Bida Lavana.<sup>3</sup>

**EDAX Study:** EDX analysis, or Energy Dispersive X-ray analysis, is also known as EDS or EDAX analysis. This technique is employed to determine the elemental composition of a specimen or specific areas within it. The EDX system functions as a built-in component of a scanning electron microscope (SEM). It operates by using a source of X-ray excitation to interact with the sample. The technique's ability to characterize materials is largely based on the fact that each element has a distinct atomic structure, which results in a unique set of peaks in its X-ray emission spectrum.

The pharmaceutical analysis of Bida Lavana revealed that it primarily consists of chlorine (52.76V), sodium (31.45V), and carbon (9.59V). Additionally, it contains smaller amounts of oxygen (4.02V), magnesium (0.52V), silicon (0.22V), phosphorus (0.21V), copper (0.86V), and calcium (0.38V).<sup>1</sup>

### According to Rasa Jala Nidhi

#### Sanskrit verse

vidam ch vidagandham ch kalaLavanakam tatha|  
khandam dravidkam chaiv vidaLavanamasuram||  
khandalavanakam dhurt krutakam ksharamev ch|  
krutrimakam supakyam ch vaidyakaLavanam tatha||  
vidam Lavanamushnamch tikshnam ksharayutam laghu|  
dipanam pachanam ruksham ruchyam vamathuvegadam||  
kaphavatanulomanam pittakrud rechanam tatha|  
shulajirnavibandhesu vishtambhanahagulmashu|  
hridagaurve tatha mehe vidam shubhafalpradam||

**Explanation:** Bida Lavana (artificial salt) - Vidam (saline in taste), Ushna (warm in its effect on the system), Katu (acrid), Kshariya (alkaline), Laghu (light), Dipana (digestive), Ruksha (coarse), Ruchikara (increase of appetite), Vaman (causing nausea), pacifier of Kapha and Vayu, increases Pitta and Rechaka (laxative). It is efficacious in Shula (colic pain), Ajeerna (indigestion), Vibandha (constipation), Vishtambhana (flatulence), Gulma (intestinal obstruction), Abdominal Tumour, Hridagaurva (heaviness of the heart), and spermatorrhea.”

**First Method of Preparation**

82 parts of Samudra Lavana (sea salt)  
1 part of Haritaki  
1 part of Amalaki  
1 part of Svarjika Kshara

All are powdered together well and heated strongly at temperature between 800<sup>0</sup> C to 1000<sup>0</sup> C in an earthen vessel, till they are fused together into one lump.

**Second Method of Preparation**

82 parts of Samudra Lavana (sea salt)  
1 part of Powdered Amalaki

Both ingredients are to be mixed together, kept in an earthen vessel, and then subjected to strong heat until both materials are fused together. The product when self-cooled is called Bida Lavana.<sup>4</sup>

**According to Rasaamritam**

**Sanskrit verse**

Karirapilukasthesu pacyamanesu codbhavaḥ |  
Ksarosau navasaraḥ syaccullika lavaṇabhīdhaḥ ||  
Iṣṭikadahane jataṁ panduram lavaṇam laghu |  
Taduktam navasarakhyam cullika lavaṇam ca tat II  
Rasendra jaranam loha dravanam jatharagnikrit |  
Gulmaplihasyasosaghnā bhukta mamsadipacanām !!  
Vidakhyam ca tridosaghnām cullika Lavaṇam matam |  
- (Ra. Cu. Chap 11)

**Method of Preparation:** By burning the Karira (*Capparis decidua* Edgew) and Pilu (*Salvadora persia* Linn) woods which are Kshara in taste is called Navasara or Chullika Lavana. Chemically it is also known as Ammonium chloride. That which is also produced at the place of brick firing. It is Yellowish white in color, Lavana in taste, and Laghu in Guna. It acts as “Rasendra Jaarana” (digestive of Grasa in Mercury), “Loha Dravana” (metal liquefier), and “Jatharaagnikrit” (good digestive). It helps in the digestion of the meat diet. It cures Gulma, Plihodara and

Mukha shosa. It is also considered Tridoshaghana and called Bida Lavana.

**According to Dr. Vaamana Ganesha Desai**

82 parts of Common Salt  
1 part of Bibhitaki (Terminalia belerica Roxb.) Churna  
1 part of Amalaki (Emblica officinalis Linn.) Churna  
1 part of Svarjika Kshara

All these are mixed together and put in an earthen pot, mouth closed with the help of the lid and Sandhi Bandhana is done properly and allowed to self-dry. After that strong heat is given. On self-cooling material is to be collected and called a Bida Lavana.

**Bida Lavana Properties**

**Sanskrit verse**

Saksaram dipanam suksmam sula hridroganasanam ||  
Rocanam tiksnamusnam ca vidam vatanulomanam |  
(Su. Su. Chap 46)<sup>7</sup>

**Explanation:** “According to Sushruta Samhita, it has Kshariya Rasa, Ushna, Tikсна and Sukshma in Guna, Dipana, Rochana and Vata Anulomana in karma and cures Shula and Hridaya Roga.”

**Sanskrit verse**

Tiksnayadausnyadvya vayitvaddipanam sulanasanam ||  
Urdhvam cadhasca vtanamanulomyakaram vidam |  
(Ca. Su. Chap 27)<sup>8</sup>

**Explanation:** “According to Charaka Samhita, it is considered Dipana by its Tikshna, Ushna and Vyavayi property. It is Shula Nashana and relieves intestinal colic pain and helps in the upward and downward Vata Anulomana (relieves flatulence by eructation and passing of flatus).”<sup>5</sup>

Numerous Ayurvedic texts from ancient times (like Samhitas) to recent Nighantu and textbooks of Rasashastra have mentioned Bida Lavana amongst them. The details are tabulated below-

**Table 1: Lavana according to Samhita**

Name	Charak Samhita	Sushruta Samhita	Ashtanga Sangraha	Ashtanga Hridaya	Sharangdhara Samhita	Bhavapraksh Nighantu
Saindhava	✓	✓	✓	✓	✓	✓
Sauvarchala	✓	✓	✓	✓	✓	✓
Bida	✓	✓	✓	✓	✓	✓
Samudra	✓	✓	✓	✓	✓	✓
Audbhida	✓	✓	✓	✓	---	✓
Krishna	---	---	✓	✓	---	---
Pamsuja	---	---	---	✓	---	---
Gutika	---	✓	---	---	---	---
Romaka	---	✓	✓	✓	✓	✓

**Table 2: Lavana according to different Rasa Shastra texts**

Name	R.R.S.	R.T.	R.J.N.	R.Ch.	R.M	R.H.T.	R.R.	R.S.S.
Saindhava	✓	✓	✓	✓	✓	✓	✓	✓
Sauvarchala	✓	✓	✓	✓	✓	✓	✓	✓
Bida	✓	✓	✓	✓	✓	✓	---	✓
Samudra	✓	✓	✓	✓	✓	✓	✓	✓
Romaka	✓	✓	✓	✓	✓	✓	---	✓
Chullika	✓	---	✓	✓	✓	✓	✓	✓
Kacha	---	---	---	✓	---	✓	✓	---
Gada	---	---	---	✓	---	---	---	---

Table 3: Different Ayurvedic formulations containing Lavana<sup>6</sup>

Rasayoga	Agnitundi Vati, Brihat Agnikumar Rasa, Kshudhasagara Rasa, Vadavanala Rasa, etc.
Churna	Lavana Bhaskara Churna, Lavanottamadi Churna, Avipattikara Churna, etc.
Taila	Brihat Saindhavadi Taila, Saindhavadhya Taila, etc.
Varti	Saindhavadi Varti, etc.
Vati/Gutika	Chitrakadi Vati, Sauvarchaladi Gutika, etc.
Anjana	Lavanadyanjana, Saindhavaanjana, etc.
Lepa	Saindhavadi Lepa, etc.

## DISCUSSION

Bida Lavana is indeed a crucial element in Ayurvedic medicine, especially within the context of Rasashastra (the science of mercury and mineral-based formulations). Its role as an artificial salt made from ammonium chloride is well-documented, with various therapeutic properties aligning it with the treatment of numerous health conditions. These include digestive disorders, heart diseases, and imbalances in Doshas (the body's bio-energetic principles: Vata, Pitta and Kapha).

The therapeutic value of Bida Lavana is derived from its unique chemical composition, predominantly containing ammonium chloride (NH<sub>4</sub>Cl), which contributes to its properties as Tikshna (sharp), Ushna (hot) and Laghu (Light) substance. This combination allows it to stimulate digestive functions, relieve flatulence, ease Shula (abdominal pain) and regulate the flow of bodily Vata, aligning with its traditional Ayurvedic applications. Additionally, it can aid in alleviating conditions like Vibandha (constipation), Ajeerna and Hridaya Roga (heart disease).

In the classical Ayurvedic texts, the role of Bida Lavana is defined by its specific qualities like Tikshna (sharp), Ruchikara (taste-enhancing) and Agnidipaka (stimulating digestion). It is often used in formulations where salts are combined for a synergistic effect, as seen in combinations like Lavana Panchaka. These formulations reflect Ayurveda's holistic approach to health, wherein medicinal salts are not only used for their therapeutic properties but also to balance the body's energies and improve overall well-being.

Despite the traditional methods outlined in Rasashastra for preparing Bida Lavana, such as using heat to process specific salts and herbs, modern production methods are more commonly used today. These newer methods typically involve artificial synthesis or the use of readily available salts in place of the more complex traditional preparations. The shift towards commercially prepared Bida Lavana, rather than those prepared according to classical Ayurvedic guidelines, could be attributed to several factors, including ease of production, cost-effectiveness, and accessibility. However, this shift raises questions about the purity and authenticity of the product, as modern methods may not replicate the exact chemical and energetic properties of the traditionally prepared salt.

While modern Bida Lavana products are synthesized using methods like those seen in X-ray fluorescence (XRF) or energy dispersive X-ray analysis (EDX), these newer forms still maintain the critical properties of the original salt. However, such deviations may affect their efficacy in specific therapeutic contexts, as Ayurveda emphasizes the preparation process as integral to the medicinal properties of the final product.

In summary, while the classical preparation of Bida Lavana according to Ayurvedic methods may no longer be commonly practiced today, its importance within the system remains substantial. The chemical properties of Bida Lavana, especially its role as an ammonium chloride-based salt, make it a unique and

valuable medicinal ingredient in Ayurvedic formulations. Modern methods may be more accessible, but they also underscore the importance of maintaining the integrity of traditional practices in preserving the therapeutic benefits of Ayurvedic formulations.

## CONCLUSION

Bida Lavana is a significant component in Ayurvedic medicine, recognized for its therapeutic benefits and diverse applications. As an artificial salt primarily identified as Ammonium Chloride, it plays a crucial role in enhancing digestion, balancing Vata Dosh, and addressing a variety of health conditions. The traditional preparation methods, rooted in ancient texts, demonstrate a meticulous approach that ensures the quality and efficacy of the final product.

The integration of modern analytical techniques, such as XRF and EDX, into the study of Bida Lavana not only validates its composition but also opens new avenues for research and application. The comparative analysis of its formulations across various Ayurvedic texts highlights its established significance in the field, showcasing the adaptability and depth of Ayurvedic pharmacology.

As the practice of Ayurveda continues to evolve, the standardization and rigorous scientific validation of Bida Lavana could enhance its credibility in contemporary healthcare. Ultimately, Bida Lavana exemplifies the potential of traditional knowledge to inform and enrich modern medicinal practices, bridging the gap between ancient wisdom and modern science.

## ABBREVIATIONS

R.R.S. – Rasa Ratna Samucchaya,  
 R.T. – Rasa tarangini,  
 R.J.N. – Rasa Jala Nidhi,  
 R.Ch. – Rasendra chudamani,  
 R.M. – Rasa Manjari,  
 R.H.T. – Rasa Hridya Tantra,  
 R.R. – Rasa Ratnakar,  
 R.S.S. – Rasendra Sara Sangrah

## REFERENCES

1. Naveena Kodlady, Preparation of Vida Lavana and its Energy Dispersive X-Ray Analysis, AAM, January-June 2015; 4: 1-2.
2. Sadananda Sharma S, Rasatarangini, 1st ed, Varanasi: Chaukhamba Surbharati Prakashan; 2015, English commentary by Angadi Ravindra, Kshara Viseshadi Vijnaniya Taranga, shlokas 140-152; p. 237.
3. Chinmayee Mestry, Elemental analysis and comparison of various salts by XRF method and preparation of Vida Lavana by modified method and its analysis, World Journal of Pharmaceutical Research, February 2024; 13(7):563-581.
4. Mookerji Bhudeb, Rasa Jala Nidhi, 3rd ed, Vol. 3, Delhi: Parimal Publications; 2021. Chapter 6: p. 203.
5. Vaidya Jadavji Trikamji Acharya, Rasa Amritam, 2nd ed, Varanasi: Chaukhambha Sanskrit Bhawan, English

- translation by Joshi Damodar, Lavana Kshara Vijnaniyam, 2003; p. 203.
6. Devanathan. R, Lavana Varga in Ayurveda – A Review, Int. J. Res. Ayurveda Pharm, November-December 2010;1(2): 239-248.
  7. Kaviraj Kunjalal Bhishagratna, editor. Sushruta Samhita. Vol. 1, Sutrasthana, Varanasi: Chowkhamba Sanskrit Series, Chapter 46, Shloka 315, 2019; p. 506.
  8. Sharma RK, Bhagwan Dash. Caraka Samhita Agnivesa's. Vol. 1, Sutrasthana, Varanasi: Chowkhamba Sanskrit Series; 2008. Chapter 27, Shloka 302, 2008: p. 552.

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