ISSN: 2322 - 0902 (P) ISSN: 2322 - 0910 (O)



## **Review Article**

# UNVEILING THE HISTORICAL AND LITERARY ASPECTS OF RAJAVRAT: AN IN-DEPTH OVERVIEW

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### Article info

#### **Article History:**

Received: 27-12-2023 Accepted: 16-01-2024 Published: 04-02-2024

#### **KEYWORDS:**

Semiprecious stone, Lapis lazuli, *Lajaward, Rajavrat.* 

### **ABSTRACT**

Rajavrat known as Lapis lazuli stone is one of the semiprecious stone in Indian alchemy placed under *Upratna Varg*. Lapis lazuli stone is made up of Metamorphic Rock and chemically it is mixture of minerals (Na S<sub>3</sub>-Al) Al<sub>2</sub> (SiO<sub>4</sub>)<sub>3</sub> with lazurite. It is royal blue in colour and used since century for ornaments, beads and making of decorative items. The 'blue pigment' known as ultramarine is extracted from it and used in paintings and colouring agent since middle age. It is one of the most spiritually used stone worldwide and used therapeutically in different system of medicines. In Ayurveda it is mentioned in most of the *Rasagranthas* and therapeutically given in various ailments mainly in diabetes, alcoholism, and urinary disorders. Its identification, different purification methods, therapeutic uses are described in various texts. An attempt has been made to compile and provide information regarding its historical presence, mineralogical identification, physicochemical properties and therapeutic uses in different system of medicine.

### **INTRODUCTION**

Rajavrat, a semiprecious and spiritually significant stone in the Indian medical tradition, belongs to the category of *Upratnas*, which are semiprecious stones with lesser hardness, luster, quality, and transparency compared to *Ratnas* (precious stones). The name "Rajavrat," commonly known as "Lajavrat," is derived from the Persian words "laj" (meaning "to make design") and "award."[1] This name reflects its use by artists in creating designs and artwork. Rajavrat corresponds to lapis lazuli in Indian alchemy, with "lapis" originating from the Latin word for "stone" and "lazuli" signifying "sky" or "heaven." Thus, it is often referred to as the "stone from the sky.<sup>[2]</sup>

Lapis lazuli, a semiprecious stone, has been mined for thousands of years and is characterized by its deep blackish or dark royal blue hue, smooth texture, weightiness, and shine resembling a peacock's neck. This stone is associated with prosperity and has been used to craft ornaments for kings.<sup>[3]</sup>



According to the *Garud Purana*, lapis lazuli is linked to the radiance of King Bali and is believed to cure jaundice while improving vision.<sup>[4]</sup>

Lapis lazuli, renowned for its royal blue color, was first discovered in Afghanistan's Sar-i-Sang deposit, where it has been mined continuously for over 7,000 years, making it one of the world's oldest mines. Its geological occurrences are primarily related to contact metamorphism of limestone, dolomites, and evaporates, which are typically of metamorphic origin. Comprising various minerals, lapis lazuli is chemically composed of sodium, sulphur, aluminium, silicon, and oxygen. It is also referred to as "ultramarine" and is primarily found in regions such as Persia, Afghanistan, and the USSR, with occurrences in Ajmer, Rajasthan regions of India, as well as it is artificial produced. [6]

Lapis lazuli has a rich history of use, dating back to prehistoric times for jewels and even as a pigment known as "aquamarine" during the Middle Ages. It is inlaid in various palaces, cathedrals, and wall panels. In contemporary times, it is used to create jewel items like necklaces and rings, as well as sculptures, vases, and other decorative objects. In Ayurveda, lapis lazuli is employed therapeutically for various ailments after undergoing various treatments

such as purification, incineration, calcination, and extraction, typically in the form of *Bhasma*.

**History:** Ratnas are valued in India from the ancient times for not only decorative and ornamental purposes but also avoiding the harmful effects of the planet and for securing prosperity and longevity. Testing of gold and gems, colouring of gems, and knowledge of mines and quarries is mentioned in ancient Kamasutra of Vatsayana in the 5th century A.D and also in Vrihat Samhita written by Varahamihira of 6th century A.D. Garudpuran<sup>[7]</sup> (9th century A.D) had several chapters on Ratnapariksha and they also characterized gems from another by relative weight, hardness, lustre, transparency and colour, fusibility especially when heated in combination with alkalies. There is no mention of Rajavrat in ayurvedic Samhitas but after Vrihatsamhita it is mentioned in various Rasgranthas. Almost all of the *Rasgrantha* has mention of *Rajavrat* in particular Rasvarg such as Ras Ratna Samuchya includes it in Ratna Varga and Uparas Varga,[8] Rasa Prakash Sudhakar and Rasa Chudamani put it in Maharas Varga<sup>[9]</sup> and Ayurved Prakash in Mani varg <sup>[10]</sup> and Rasa taringini incorporated it in Ksudraratna<sup>[11]</sup>.

As early as the 7<sup>th</sup> millennium BC, lapis lazuli was mined in the Sar-i Sang mines, Shortugai, and other mines in Badakhshan region in northeastern Afghanistan. [12] Items made of lapis lazuli that date to 7570 BC can be found in Bhirrana, the oldest site of the Indus Valley civilization.[13] The Indus Valley Civilization gave lapis a lot of attention (7570–1900 BC). At Neolithic burials in Mauritania, the Caucasus, and Mehrgarh, lapis beads have been found. [14]

In western nations like Egypt between 4000 and 3500 B.C. and Western Pakistan (around 7000 B.C).<sup>[15]</sup> Nearly, all significant archaeological sites have evidence of lapis lazuli, which is used to make jewellery, seals, and amulets.<sup>[16]</sup> It was prized by the aristocracy of the time in Mesopotamia and Egypt and employed in a number of rites, tributes, and as a royal gift. Lapis lazuli was mined for its blue mineral, which was used to make beads or carved artifacts.

This deep azure gemstone, revered by ancient civilizations such as the Egyptians, Babylonians, Minoans, Chinese, Greeks, and Romans, boasts a rich history of adorning some of the finest artworks. Notably, it graces the famous death mask of King Tutankhamen (1341–1323 BC), where it is skillfully inlaid alongside turquoise and carnelian in radiant

gold. Cleopatra, a successor to King Tutankhamun, was even rumoured to have applied crushed lapis lazuli as eyeshadow. [17] additionally, powdered lapis found utility as both a cosmetic and a pigment, with a history dating back to the 7th century. During the middle Ages, it was used as aquamarine or ultramarine pigment and adorned the walls of palaces and churches in some instances. In India, it earned favour from Mughal emperors and left its mark on iconic structures like the Taj Mahal.

**Crystal Chemistry:** Lapis lazuli is a mineral composite comprising several elements, including lazurite (making up 25-40% and responsible for the blue color), augite, calcite (white in color), diopside, enstatite, glimmer, hauvnite, hornblende, nosean, and pyrite (a white-gold iron sulfide). This combination is classified as a rock.[19] Lazurite, belonging to the sodalite group of cubic tecto-silicates, gives lapis lazuli its renowned royal blue appearance and is widely used as an ornamental gemstone. The formation of lapis lazuli is linked to metamorphism, particularly contact metamorphism of limestones, dolomites, evaporates. The intensity of the blue colour in this rock is contingent on the sulphur content of lazurite, ranging from ultramarine to lighter shades. Higher sulphur content leads to deeper blue hues, while selenium substitution for sulphur results in a bloodred colour. The presence of calcium also influences the stone's colour. [20]

Calcite is the second most common mineral found in lapis lazuli, often appearing as white layers, fissures, or mottling, making it easily visible. Sometimes, calcite combines with lazurite, creating a rock with a faded denim-like coloration. Pyrite, on the other hand, typically presents itself in lapis lazuli as small, irregularly dispersed grains with a vibrant gold hue. These grains can be concentrated, intergrown into separate layers or patches, or occasionally fill fractures within the rock. [20]

## Occurrence and sources:

Lapis lazuli is typically sourced from various regions in Central Asia. According to Yadavji Trikam Ji, it is predominantly found in places such as Persia, Afghanistan, and the USSR. In India, it can be located in Kashmir, Rajasthan, particularly in the city of Ajmer, and it is also artificially produced. [21] Generally, lapis lazuli is obtained from countries including Russia, Germany, Myanmar, Afghanistan, and others. [22]

Lapis lazuli sites <sup>[23]</sup>
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Afghanistan	Badakhshan, Sar-e-Sang, Koksha valley, Ladjuar Medam		
Asia	Pamir Mountains		
Chile	Coquimbo, Limari Province, Monte Patria, Flor de los Andes		
Myanmar	Mogok Township, In-jauk, Lay-bauk, bawmar, kabaing		
Russia	Irkutsk oblast, malaya bystrinskoe lazurite deposite		

Tajikistan	Gorno-Badakhshan, Shughon, Shakhdara range
USA	Colarado, Blue Winkle Mine, Taylor Park

### Vernacular Names[23]

Hindi Name: Lajavarda

English Name: Lapis Lazuli/Ultramarine

Synonyms: Nripavrat, Avratmani, Nripopal, Nilashma,

Rajanyavartakavarat.

## Mineralogical Identification and Physico-chemical properties

Chemical Formulae: Na<sub>4</sub> (NaS<sub>3</sub>Al) Al<sub>2</sub> (Sio<sub>4</sub>)<sub>3</sub> Chemical Name: Mixture with minerals of lazurite

Category: Rock

## Qualities of lapis lazuli stone (*Grahya-agrayata lakshan*)

- Slight red and blue colour, heavier in weight and smooth is of *Uttam* (superior) quality and opposite to these qualities is of *Madhya* quality.<sup>[24]</sup>
- Vishrahit (non-toxic), black in colour, smooth, have weight, clean different colour fluorescence, Shikhikantavat.<sup>[25]</sup>
- Best- Guru (heavier in weight), smooth.[26]

In Unani medicine, the quality of Lajaward mentioned in the book Ganj Badaward can be assessed several approaches. First, Lajaward transformed into a wet powder and applied to cotton fabric, which is then rubbed. If blue lines appear on the fabric during this process, it is likely synthetic. Another method involves placing powdered Lajward in water and allowing it to settle without affecting the water's colour. This settling without altering the water's hue is indicative of better quality. A different test involves mixing *Lajward* with saliva and rubbing it on the hand. If the hand turns blue as a result, the *Lajward* is likely artificial; conversely, if it doesn't cause a colour change, it is considered genuine. Lastly, to differentiate between synthetic and natural Lajaward, it can be placed on a hot pan or burning charcoal. If it burns quickly and turns black during this process, it is synthetic. On the other hand, if it retains its original bluish colour, it is deemed natural. [27]

Physical Properties: These are reliable and easy identification features for minerals and metals. These properties serve as preliminary but powerful parameters for identification of raw drugs.<sup>[28]</sup> It is of blue colour with reddish tint, heavy in weight, smooth and can be oily is considered as of superior quality and recommended for use. Other than these which is clear, bright, devoid of *Mala* (dirt), blue like sky without clouds and just like Peacock's neck in colour or black is also considered of best and opposite to these qualities is inferior and not recommended for use.

Colour: Ultramarine, midnight blue, bluish green, green

Cleavage: Imperfect/fair Fracture: Sub-conchoidal

Specific Gravity: 2.38 to 2.45

Hardness: 5.5

Streak: Bright blue for lazurite, white for the small cell

Haynes.

Transparency: Opaque

Tenacity: Brittle Crystal: Isometric Lustre: Resinous

Fluorescence & other light emission

Fluorescence (General): Strong: White, also orange,

copper-coloured

Fluorescence (Short Wave UV): May show a pinkish

response

Fluorescence (Long-Wave UV): Orange to pinkish spots

(calcite)

Optical Properties: In identification of minerals that are crystalline and transparent optical crystallography is applied. This method is time tested petrographic/ mineralogical method in which thin sections of mineral or ore samples are analysed and Several parameters are computed from few fragments by different method. Birefringence is the optical property of a material having a refractive index that depends the polarization and propagation direction of light[29]. Pleochroism is an optical phenomenon in which a substance, especially when illuminated by polarised light, seems to be different colours when viewed from different angles. Absorption Spectra, RI, SG, etc.[30]

Refractive Index: 1.5 Birefringence: None Pleochroism: Absent Dispersion: None

**Chemical Properties** 

Lapis lazuli is sensitive to high temperature and strong pressure, hot bathes, acids and alkalis and its ornament like rings should be removed when someone wearing it doing some household work. When it is exposed to Hcl it releases H<sub>2</sub>S gas (rotten egg smell)<sup>[31]</sup> It should not be placed under direct sunlight as it can cause fading of colour of stone. As it is porous in nature should not kept in water for longer

time. [32]

### Pharmacological Properties

The terms *Rasa* (taste), *Guna* (properties), *Virya* (active principle), *Vipaka* (bio-transformation), *Prabhava* (specific activity), and *Karma* are identical in modern pharmacology to those used in Ayurvedic pharmacology (action) and are deciding factors for its therapeutic actions.

Table 1: Pharmacological Properties of Rajavrat

Catagory	Details			
Category	Details			
Broadly classified group	up   Upratna			
Types	<ul> <li>Rajavrat is of two types according to its form i.e churna and gutika [33]</li> <li>According to colour it is of red, blue, and mixed variety [34] and according to source natural and artificial.</li> </ul>			
	• According to <i>Ras Tantra Saar</i> it is of two types one with golden streaks a other one is with silver streaks in it. <sup>[35]</sup>			
	*In Unani view cleaned <i>Rajavrat</i> in first stage is cold and in second stage it is <i>Ruksha</i>			
Rasa <sup>36</sup>	Katu, Tikta			
Guna	Snigdha, Sita			
Virya	Sita			
Karma	Dipana, Pachana, Vrisya, Brimhaniya, Rasayana, Visapaha			
Dosa prabhav <sup>36</sup>	Sleshmahara, Anilapaha, Pittanasana			
Doses	75mg-125mg with honey or <i>Ghrit</i> etc according to disease			

## **Pharmaceutical Description**

Pharmaceutical processing techniques, known as *Sanskaras*, are employed to transform raw materials into pharmacologically active forms. In Ayurveda, methods like *Shodhan*, *Bhavana*, and *Marana* are utilized to triturate, macerate, heat, and burn metals, minerals, and gemstones repeatedly, resulting in the creation of *Bhasma*. These techniques convert the parent metals, minerals, and gemstones into nano-sized medicinal particles, modifying their physical and chemical properties. This nanosizing facilitates the effective delivery of drugs to their intended target sites. Additionally, these procedures mitigate the potential toxic effects of metals and minerals. Medications produced through these methods not only exhibit enhanced efficiency but also require lower doses and yield quicker therapeutic.<sup>[37]</sup> Consequently, the incorporation of metals and minerals has become a vital aspect of Ayurvedic medicine. In the case of *Ratnas* and *Upratnas*, various *Sanskaras* are applied to render them in an assimilable form. Before therapeutic consumption, *Rajavrat* also undergoes several processing techniques, including *Shodhan*, *Marana*, and *Satvapatan* 

Table 2: Different pharmaceutical procedures mentioned in different Rasgranthas

Rasgranth	Samanya shodhan (Purification)	Marana (Calcination)	Satvapatan (Extraction)
Ras Ratna Samuchya <sup>[38]</sup> Mentioned it in ratnas	Dola yantra-swaras of Shirish pushp and ardrak ras	Trituration with  Gandhak and nimbu  swaras then kept in  Sarav samput -7  puta- bhasma	Triturated with <i>Sudh Manashila</i> in equal quantity and after that it is digested /desecrated in a <i>Lauh patra</i> with buffalo milk. When milk became thick then it is mixed with <i>Shudh tankan</i> and <i>Panchgavya</i> and <i>Jarana</i> process is done and made into bolus form and <i>Puta</i> is given with coal of <i>Kher</i> wood
Ras Prakash Sudhakar <sup>[39]</sup> Mentioned it in Maharas varg	Dola yantra-Swedan- Swaras of Gaumutra, Yavkshardravya, Nimbuswaras	Trituration with  Gandhak and  Bhringraj swaras  then kept in Sarav  samput - Varah  puta (7 times) -  Bhasma	Triturated with Koshataki swaras, Ksheerkand swaras, Bandhyakarkoti swaras, Kakamachi swaras, Rajshami swaras, Triphala kwath, and Grahdhoom, and then made into bolus and kept in Musha and covered with Pidhan and Puta is given with coal of Kherwood.
Ayurved Prakash <sup>[40]</sup>	Mentioned it in <i>Mani varg</i> but no description of <i>Shodhan</i> , <i>Marana</i> and <i>Satvapatan</i> .		
Ras taringani <sup>[41]</sup>	1. Dola Yantra-in Gaumutra and	Trituration with equal parts	Triturated with Shudh manashila churna and Gaudugdh and buffalo milk and digested/

Mentioned it in Kshudraratna varg	Nimbuswaras and Yavkshar- Pottali for 3hrs.  2. Dola Yantra- in Nimbuswaras, Yavkshar, and Jalswedan for 3hrs.  3. Dola yantra- Shirishpushp swaras- Swedan for 3hrs.	Gandhak with fresh Nimbu swaras for 3 days and dried in sunrays then kept in Sarav samput and joints sealed and kept in Gajput (8 times).	desecrated in a Lauh patra after that equal part of Mitra panchak is added then Chakrika is made and kept in Musha. Then this Satva is mixed with Shudh gandhak and then triturated with Bijora nimbu and then Bhasma is formed.
Ras jal nidhi <sup>42</sup>	1. Boiled with lemon juice-2/3 times mixed with <i>Gaumutra</i> and <i>Ksharas</i> 2. Boiled with <i>Shirish</i> flower mixed with ginger juice.	Powdered and subjected to heat for 7 times, after having rubbed each time with juice of <i>Matulung</i> and sulphur.	Mixed with <i>Manashila, Ghrit, Tankan, Panchgavya</i> and boiled with buffalo milk in an iron pot and made into lump heated by means of fire made of <i>Khadira wod</i> .

**Pharmacotherapeutic properties:** *Dipan, Pachan Vrishya, Rasayanam* in *Karma*. It can destroy *Prameha, Kshaya, Arsa, Pandu* and *Kapha Vata Rog*.

In Unani it is used as exhilarant, anti-palpitation, anti-melancholic, anti-ptyriasis, anti-vitiligo, blood purifier, diuretic, purifier of turbid *Dosha*.

## **Therapeutic Indications**

Rajavrat stone, offers therapeutic benefits for various conditions including asthma, diabetes, tuberculosis, vomiting, and hiccup.[41] This versatile stone possesses rejuvenating, nourishing, appetizing, and digestive properties. It addresses urinary disorders, hemorrhoids, anemia, and alcoholism, and is used in conditions like Prameha (diabetes), Kshayaroga (tuberculosis), Arsharoga (hemorrhoids), Panduroga (anemia), and Vatavikar (Vata-related disorders).[8] Additionally, it aids digestion, provides nutrition, acts as a curative and preventive agent against diseases, and retards aging and decay.[42]

**Table 3. Important therapeutic formulations:** 

Yoga	Ingredients	Therapeutic uses
Bheemparakram Parad , Gandhak-kajjali		Prameh
ras <sup>[43]</sup>	Naag bhasm, Kantlauhbhasm, Abhraksatvabhasm, Rajavrat bhasm, Shilajeet, Naag bhasm, Ankol and Gunja beej kalk, Nirmali root kwath & Neempatra swaras	Dose- 6 ratti
Rambaan ras [43]	Rajat (Marit by Vang), Svarna (Marit by Naag), Parad bhasm, Akulimula svaras Svarnamakshik bhasm, Vaikrant bhasm Rajavrat bhasm, Gandhak	Prameh Dose-3 ratti
Rajavrat ras [43]	Rajavrat bhasm, Parad bhasm, Svarna bhasm, Mulethi churna, Rajavrat bhasm in equal parts	Grahni rog Dose -2 masha
Rajavratavleh [43]	Rajavrat bhasm, Vaikrant bhasm, Tamra bhasm, Abhrak bhasm, Tikshna lauh, Shilajeet, Mandur, Trikatu, Triphala, Trimad, Nagabala, Ajadugdh, Safed shalmali	Prameh, Gulm, Hridrog, Vardhm, Arsh, Vrishanpeeda, Shukrashmari, Mutraghat, Viryavikar. Dose- 1-2 Ratti

In the *Rasgrantha* known as *Rasa Taringini*, several combined therapeutic indications for *Rajavrat Bhasm* are outlined. Firstly, *Rajavrat bhasm* is combined in equal proportions with *Rajatbhasm* and *Swarna makshikbhasm*, and this mixture is then cooked in *Gaughrit*. Subsequently, a *Churna* is prepared from

this concoction and is further mixed with *Khand*, honey, and *Gaughrit* for the treatment of *Madatyay*. Another therapeutic approach involves blending *Rajavrat bhasm* with *Rasasindoor*, *Tamrabhasmn*, and *Mulethi churna*, followed by consumption along with *Khand*, honey, and *Gaughrit*. Additionally, *Rajavrat* 

bhasm can be mixed with equal parts of Abhraksatva Bhasm and Kantlauh bhasm, and it is administered with honey specifically for managing Prameh. These combined therapeutic methods offer diverse applications for Rajavrat Bhasm in various health conditions as described in Rasa Taringini. [41]

In Unani medicine, it serves various purposes, including acting as a cardiac tonic, aiding in blood purification. headaches. alleviating addressing constipation, and providing vital nourishment to the body. Additionally, it is used as a purgative for conditions like elephantiasis and in the treatment of melancholic disorders. For eve disorders such as excessive lacrimation, blepharitis, conjunctivitis, and ophthalmic ulcers, it is applied as Surma, a type of eve cosmetic. Its snuff is employed to treat epistaxis (nosebleeds), while its paste is used for various skin conditions like pityriasis and vitiligo. In powdered form, it is taken orally to manage various blood disorders. Furthermore, in gynaecological disorders, it can be administered orally or in the form of a suppository. Specifically, a suppository made from Lajward (1½ gm) and olive oil (3½ ml) is inserted into the vagina to prevent abortion<sup>[27]</sup>

In the Chinese and Tibetan medicine system Liu-li is referred as Lapis lazuli, but some authorities compare this stone with quartz. Lapis lazuli in traditional Tibetan medicine is known by many synonyms and used for curing cases of poisoning, leprosy, disorder of lymph and greying of hair. [44]

In Egyptian medical writings which were found on stelae (stone or wooden blocks), ostraca (shards of pottery or clay tablets) and medical Papyrus. Medical Papyrus comprises of various recipe and there was mention of two recipes having Lapis lazuli used in the treatment of eye. Other recipe comprising lapis lazuli with ochre, honey and green and black kohls including lapis lazuli is mentioned to eliminate blood vessels in both eyes (can be conjunctival dilatation). At the Metropolitan Museum of Art (New York) there was a limestone ostracon which contains a prescription for hysteria comprising lapis Lazuli, 'green stone' (malachite), a fumigant ('Ki-bu'), one herbal component ('Ssyt') and raisins, all mixed together in a jug of wine. [45]

**Lapis lazuli in feng shui:** This potent stone, resonating with elevated frequencies, is thought to enhance self-awareness, bestow good fortune, and impart spiritual insight. Its associated element is water, symbolizing tranquility, serenity, and purity, making it a stone that fosters peace and inner calm.<sup>[46]</sup>

## **CONCLUSION**

Rajavrat stone, also known as lapis lazuli, is a semi-precious stone with a rich history of use in art, spirituality, and ornaments. It is primarily found in Middle Asia, notably in Afghanistan's sang-e-sar

deposit. Lapis lazuli is chemically composed of lazurite (25-40%), a complex blue mineral falling under the sodalite group. Its deep blue color is influenced by the presence of sulphur. This stone, known for its ultramarine color and strong fluorescence, has been associated with royalty and used for healing and spiritual purposes for centuries.

Lapis lazuli has been used as a colouring agent for paintings, wall decorations, and in the creation of decorative objects like sculptures, vases, and jewellery. It was used in King Tutankhamun's mask and various artifacts, as well as made into beads for health and fortune. Cleopatra used it as eyeshadow. In Ayurveda, it is classified as a "Ratna" and possesses properties such as "Katu," "Tikta rasa," and "Sheet virya," making it useful for urinary and digestive issues. It is therapeutically employed after processing, including purification, calcination, and extraction, for ailments like diabetes and urinary disorders. It is also used in combination with other metals and minerals for disorders like alcoholism.

In the Unani system, lapis lazuli is used as a cardiac tonic and for ophthalmic disorders. In Chinese and Tibetan medicine, it is used for various conditions, including poisoning, leprosy, lymphatic disorders, and graying hair. Ancient Egyptian medical writings mention its use for eye disorders and hysteria. Spiritually, lapis lazuli is believed to bring good luck, wisdom, and peace.

This article aims to provide a comprehensive compilation of information on lapis lazuli, including its mineralogical identification, physico-chemical properties, and therapeutic uses across different systems of medicine and texts, to assist researchers and scholars.

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### Cite this article as:

Gunjan Thapliyal, Shuchi Mitra, Usha Sharma, Khem Chand Sharma. Unveiling the Historical and Literary Aspects of Rajavrat: An In-Depth Overview. International Journal of Ayurveda and Pharma Research. 2024;12(1):161-168. https://doi.org/10.47070/ijapr.v12i1.3081

Source of support: Nil, Conflict of interest: None Declared

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