

Vanshlochan (*Bambusa arundinacea*): A Comprehensive Literary Review with Thin-Layer Chromatographic Evaluation

Dr. Archana¹, Dr Vidushi Tyagi²

¹Dr Archana, Institute for Ayurved Studies and Research

²Dr Vidushi Tyagi, Institute for Ayurved Studies and Research

Abstract—A Literary Review on Vanshlochan Vanshlochan is a siliceous substance obtained from the nodes of bamboo stems, commonly used in traditional medicinal systems such as Ayurveda. It is known for its cooling, sweet, and therapeutic properties and is frequently used in formulations for respiratory disorders, cough, asthma, and general weakness. Classical Ayurvedic texts describe Vansh lochan as a kapha-pitta pacifying and rejuvenating substance.

This literary review focuses on the traditional references, chemical composition, and medicinal uses of Vanshlochan reported in classical and modern literature. Studies indicate that it contains silica and trace minerals that may contribute to its antioxidant, anti-inflammatory, and expectorant activities.

Overall, the review highlights the medicinal importance of Vanshlochan while emphasizing the need for further scientific research to validate its pharmacological properties and therapeutic potential.

Index Terms—Vanshlochan, Ayurveda, TLC, Rf value

I. INTRODUCTION

Introduction: Ayurveda, a system that integrates both biological and spiritual aspects of health, is believed to have originated in the Indian subcontinent more than 5000 years ago. This traditional medical system has gained global recognition and is now widely practiced across the world. In Ayurveda, medicinal plants serve as the primary source of therapeutic preparations. India is considered one of the world's twelve mega-biodiversity countries, possessing a vast variety of plant species. Out of the approximately 30,000 medicinal plants identified worldwide, more than one-fourth (around 8000 species) are found in India. This rich plant diversity provides an important

resource of medicinal raw materials for traditional healthcare systems as well as for the modern pharmaceutical industry.¹

Geographical distribution of *Bambusa arundinacea* (Retz.) Willd. states that this plant is a native of tropical Asia, but also cultivated throughout the tropics around the world, mainly found in Myanmar and Sri Lanka. In India, it is found throughout the plains and low hill, forests of Eastern India up to 2100 m and in West and Southern region up to an elevation of 1500 m. In Ayurveda, the terms Vanshlochan and Tabasheer are often used interchangeably, although their original sources may refer to different species. Vanshlochan is a siliceous exudate obtained from bamboo, but in its pure form it is now rarely available in the market. In Sanskrit literature, the rhizome of *Curcuma angustifolia* Roxb., commonly known as Tikhur or East Indian arrowroot, is sometimes used as a substitute for Tabasheer. This substitute is often marketed and sold under the name Vanshlochan in commercial preparations with chemical constituents ⁽²⁾

Silica- 28 parts

Lime- 4 parts

Magnesia- 6 parts

Potassium- 34 parts

Sodium- 12 parts

Chlorine- 2 parts

Gandhak- 10 parts

Table 1: Vanshlochan Mention in Various Nighantus:

Nighantu	Gana/Varga
Nighantu Aadarsh ⁽³⁾	Haritakyadi Varga
Dhanvantari Nighantu ⁽⁴⁾	Shatpushpadi varga
Kaiydeva Nighantu ⁽⁵⁾	Aushadhi Varga
Bhavprakash Nighantu ⁽⁶⁾	Haritakyadi Varga
Raj Nighantu ⁽⁷⁾	Pippalyadi varga

Table2: Properties and Action:

Nighantu	Rasa	Guna	Virya	Vipaka	Karma
Nighantu Aadarsh ⁽³⁾	Kshaya, Madhuraa	Ruksha	Sheet	Madhuraa	Kaphapittahara, Raktapittahara, Kasahara, Shwashara
Dhanvantari Nighantu ⁽⁴⁾	Kshaya, Madhuraa, Tikt	-	-	-	-
Kaiydeva Nighantu ⁽⁵⁾	Madhuraa	-	Sheet	-	Balya, Vrishya
Bhavprakash Nighantu ⁽⁶⁾	Kshaya, Madhuraa	-	Sheet	-	Vatanashaka, Vrshya, Balya
Raj Nighantu ⁽⁷⁾	Kshaya	Ruksha	Sheet	Madhura	Pittanashaka

Thin Layer Chromatography (TLC) of Vanshlochan Principle:⁽⁸⁾

This technique is based on the principles of adsorption and partition. Separation occurs when one or more components of a mixture are adsorbed onto a thin layer of adsorbent coated on a chromatographic plate. The mobile phase moves upward through the stationary phase by capillary action, opposing gravity. The rate at which each component travels depend on its affinity for the stationary phase; substances with lower affinity move faster, while those with higher affinity move more slowly. As a result, the components are effectively separated on the TLC plate based on their differential affinities.

TLC is a technique used to separate the mixtures in which solute undergoes between the stationary and mobile phase. Mobile phase is in the form of liquid and stationary phase act through adsorption.

Rf- Retention Factor $Rf = \frac{\text{Distance travelled by sample}}{\text{Distance travelled by solvent}}$ Preparation of Test Solution

- By maceration technique.

10 gm coarsely powdered drug in 250ml conical flask with 100 ml alcohol for 24 hours.

Extract decent and make 100ml in volumetric flask.

- Stationary Phase

TLC precoated plate with Silica gel F254 of 0.2mm thickness.

- Solvent

Different for different drug

- Volume of test solution applied

5-9microlitre

- Distance travelled by solvent

8cm

- Development chamber

Twin through Chamber with SS lid

- Visualization

Under254nm, 366nm, After derivatization

TLC performed of vanslochan by:

Botanical Name- Bambusa arundinacea

Part Used-concretion

Form Used- Coarse Powder

Extraction of Raw drug - By using maceration

Stationary Phase TLC Precoated plate with silica gel 60 f254 of 0.2 mm Thickness.

Solvent System - Toluene: Ethyl acetate: Formic acid (5:3:5)

Distance travelled by solvents system- 8.6 cm

Development chamber -Twin through chamber (10*10 cm) with SS Lid.

Visualization In 256 nm UV light- Bands travelling distance- 6cm, 4.3cm, 3.8cm

In 356 nm UV light- Bands travelling distance- 7.5cm, 5.3cm, 1.5cm,

Result (Rf Value): 0.89, 0.61

II RESULT

The review showed that Vanshlochan is a siliceous substance obtained from Bambusa arundinacea and is described in major Ayurvedic Nighantus. It is mainly characterized by Madhura and Kashaya Rasa, Sheeta Virya, and is indicated for cough, asthma, bleeding disorders, and general weakness. It contains silica and other minerals, while TLC analysis showed characteristic Rf values of 0.89 and 0.61, which are useful for its identification and standardization.

III. DISCUSSION

Vanshlochan is an important Ayurvedic medicinal substance described in various classical texts, including Nighantu Adarsha, Dhanvantari Nighantu, Kaiyadeva Nighantu, Bhavaprakasha Nighantu, and Raja Nighantu. The literary review reveals that Vanshlochan predominantly possesses Madhura and

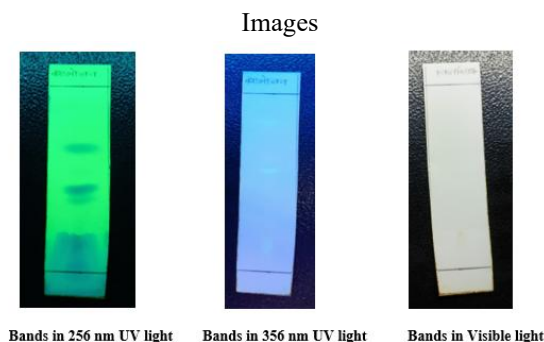
Kashaya Rasa, Sheeta Virya, and Madhura Vipaka. These properties contribute to its traditionally described Kapha-Pitta Shamaka, Balya, Kasahara, and Shwasahara actions, supporting its use in respiratory disorders, bleeding conditions, and general weakness. Vanshlochan is mainly recognized as a siliceous substance obtained from bamboo, containing silica and other mineral constituents. However, the increasing substitution and adulteration of genuine Vanshlochan in the market highlight the need for proper identification and quality standardization.

In the present study, Thin Layer Chromatography (TLC) was performed to obtain a preliminary chromatographic profile of Vanshlochan. The analysis revealed multiple bands under UV light, with reported Rf values of 0.89 and 0.61. These findings suggest the presence of different extractable constituents and may be useful for developing a chromatographic fingerprint. However, TLC alone cannot confirm the authenticity or mineral composition of Vanshlochan. The study highlights the importance of combining classical Ayurvedic knowledge with modern analytical techniques for better understanding and standardization of Vanshlochan. Further phytochemical, pharmacological, and clinical studies are required to establish its quality, authenticity, and therapeutic potential.

IV. CONCLUSION

Vanshlochan is a valuable Ayurvedic medicinal substance with significant therapeutic importance, particularly in the management of respiratory disorders, bleeding disorders, and conditions associated with general debility. Classical Ayurvedic texts consistently describe its cooling, rejuvenating, and Kapha-Pitta pacifying properties, while modern literature supports the presence of silica and other minerals that may contribute to its pharmacological activities. Thin Layer Chromatography provides a reliable method for the identification and quality control of Vanshlochan through characteristic Rf values. However, the widespread substitution and adulteration of genuine Vanshlochan remain major challenges affecting its quality and therapeutic efficacy. Therefore, standardization using pharmacognostic and chromatographic techniques, along with further phytochemical, pharmacological, and clinical studies, is essential to establish its

authenticity, ensure quality, and scientifically validate its traditional therapeutic claims.



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