



Research Article

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RASA (TASTE) AND VĪRYA (POTENCY) NIRDHĀRANA OF AN EXTRA PHARMACOPOEIAL DRUG – *BRIDELIA STIPULARIS* (L.) BLUME.

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ABSTRACT

Pharmacodynamics of dravya (substance) is explained with five fundamental principles viz. Rasa (taste), Guna (quality), Vīrya (potency), Vipāka (bio transformed) and Prabhāva (exceptional activity) collectively known as Rasapancaka (five attributes). *Bridelia stipularis* (L.) Blume is a folklore medicine with multiple uses. Identification of Rasapancaka of such folklore drugs is needed to incorporate them into Ayurvedic Materia Medica. The Rasa and Vīrya of *Bridelia stipularis* (L.) Blume was evaluated using Rasa analyzing Performa and endothermic and exothermic reaction respectively. The drug (2 g) was administered to 30 participants and their responses after intake of the drug were recorded. On analyzing the data it was found that the drug possesses predominantly Kashaya (astringent), Tikta (bitter) Rasa and Madhura (sweet) as anurasa (un-manifested). Vīrya of the drug was found to be Śīta (coldness).

Keywords: Extra pharmacopoeial drug, Rasa, Vīrya

INTRODUCTION

In Ayurveda Rasapancaka [Rasa (taste), Guṇa (quality), Vīrya (potency), Vipāka (bio transformed) and Prabhāva (exceptional activity)] is an important tool to infer the action of a drug. Ayurvedic Materia Medica includes drugs of vegetable, animal, and mineral origin. Anukta dravya (extra pharmacopoeial drugs) refers to drugs which are not mentioned in any Ayurvedic classical texts or any nighantus (lexicons).¹ Analysis of Rasapancaka of such drugs is essential to incorporate them into Ayurvedic pharmacopoeia. *Bridelia stipularis* (L.) Blume or Kanjikottam in Malayalam is such a folklore medicine with multiple uses. Even though this plant is not described in any of the Samhitas and Nighantus, there is a mentioning about the drug in Malayalam commentary of the text Ārogya Rakṣa Kalpadrumam. In this text the drug Virāla has been mentioned in the context of Jadaravṛṇa. The drug has been identified as *Bridelia stipularis* (L.) Blume. It is mentioned in Virālapatrāditaila yoga and Yavānyādikhāla.² It is a large woody evergreen climber or straggling shrub belonging to the family euphorbiaceae and is distributed in South-east Asia like the central and eastern parts of Bangladesh, India and Myanmar.³

Rasa is an important tool to infer Pancabhoutikatva (five fundamental principles) of a drug.⁴ Rasa is the first and foremost parameter to get the picture about the action of a drug. They are 6 in number based on the permutation and combination of Pancamahābhūtas i.e. Madhura (Sweet), Amla (Sour), Lavana (Salty), Katu (Pungent), Tikta (Bitter) and Kaṣāya (Astringent).⁵ Rasa of a dravya (substance) is directly perceived on its contact with Rasanendriya (tongue). The Rasa perceived immediately on consumption of the dravya and that which remains stable even in its dry form is called as Rasa or primary taste and the last

perceived Rasa after primary taste which is not stable in dry form and not easy to perceive distinctly is called as Anurasa or secondary taste.⁶ Lakshanas of each Rasa are explained in detail in Ayurvedic classics.⁷ Some of them are unique to a particular Rasa and some of them are common to one or more Rasa. It causes trouble in objective prudence. By the same token, dravyas with single Rasa is very less in number.

Vīrya is the power that performs work.⁸ All actions take place only because of Vīrya and there is no action which is not due to Vīrya. According to this definition the principles like Rasa, Gurvadiguna (physical attributes), Vipāka and Prabhāva which could be causative factor for the action is generally identified as Vīrya. Caraka opines that Vīrya of the dravya is identified through Anumāna (inference) according to its stay in the body while Vīrya of certain drug can be assessed by Pratyaksha Pramāna (direct perception) after its contact with the tongue.⁹

The objective of the present study is to assess the Rasa and Vīrya of leaves of *Bridelia stipularis* (L.) Blume. Rasa of the leaves were analyzed using validated Rasa analysis proforma.¹⁰ Assessment of the Vīrya of the leaves were followed with the guidelines of Prof. S.C. Dhyani mentioned in the book Rasapanchaka (five attributes of dravya).¹¹

MATERIALS AND METHODS

Preparation of the drug

The leaves of the drug were personally collected from Chelari, Malappuram district, Kerala and authenticated from CMPR (Centre for Medicinal Plants Research) Aryavaidyasala, Kottakkal, Kerala (reference no. CMPR 10961), India. The

collected leaves were cleaned and dried in shade and powdered. The powder was sieved through mesh size #85.

Rasa analysis

Selection of volunteers

The volunteers were Ayurvedic students pursuing their BAMS and MD (Ayu.) at V.P.S.V Ayurveda College, Kottakkal, Kerala, India. All participants provided informed voluntary consent. The participants who volunteered for the study were explained about the study and their role in the study. Every volunteer was then asked to cleanse their mouth with water prior to the onset of the experiment. Five minutes after cleansing the mouth they were given 2 g of the test drug and asked to record their inputs in the questionnaire.¹⁰

Statistical analysis

The answer (Yes/No) obtained for each characteristic and the perceived Rasa judged by each volunteer was tabulated and analyzed.

Analysis of Vīrya

The Vīrya of the drug is determined based on Exothermic or Endothermic reaction in distilled water. 100 ml of distilled water was taken in conical flask and the temperature of the water was noted with the help of industrial thermometer. 10 gram of powdered leaves of *Bridelia stipularis* (L.) Blume was added to

the above 100 ml of distilled water and shook well. It was left undisturbed for 1 hour and the temperature of water was noted with an industrial thermometer. This procedure was repeated for 3 times to avoid the errors.¹¹

RESULT

Rasa analysis

A total of 30 volunteers aged between 20-30 years participated in the study. Data shows, among the participants 63.3% of the respondents experienced Kaṣāyaraṣa followed by Thikta Rasa (56.67%) (Table 1). Unique characteristics are of Rasa given more preference than common characteristics. When the data was analyzed for the direct response on perceived taste of the drug, an overwhelmingly high number of respondents (76.67%) have pointed out Kaṣāya rasa as the perceived taste (Table 2). Anurasa of the drug perceived as Madhura by 23% of the total respondents (Table 3).

Vīrya analysis

Initial temperature of the distilled water noted as 31°C. One hour after mixing with 10 g of leaf powder of *Bridelia stipularis* (L.) Blume, the temperature became 28°C. So, there is decrease in temperature by 3°C showing the endothermic reaction of the test drug. Hence from these data the Vīrya of the drug can be inferred as Śīta (coldness).

Table 1: Volunteer's experiences of lakṣaṇas of Rasa-frequency distribution

No	Lakṣaṇa experienced	Lakṣaṇa type	Corresponding rasa	No. Reported (N = 30) with %
1	Besmears the mouth/Causes stickiness in mouth (Vaktramanulīmpati)	Individual	Madhura	40
2	Pleasant or soothing to the nose, mouth, throat, lips and tongue (ghranamukhakantaoshtajihwaprahlanāḍ)	Individual	Madhura	0
3	Causes salivation (āśyamaasrāvayati)	Common	Amla, Lavaṇa, Kaṭu	16.67
4	Cleanses the mouth (Viśadayativadanam)	Common	Amla, Tikta	40
5	Tingling sensation of teeth (daśanaan harṣayati)	Individual	Amla	6.67
6	Constriction or Shrinking of eyebrows and eyelids (akṣibruvam samkōcayati)	Individual	Amla	6.67
7	Softens the buccal cavity (mārdavam caāpādayati)	Individual	Lavaṇa	23.3
8	Burning sensation in buccal cavity and throat (kantakapolam vidāhati)	Individual	Lavaṇa	0
9	Instant irritation to tongue tip (bhriṣamudvejayati jihwāgram)	Individual	Kaṭu	0
10	Irritation in throat and buccal cavity(chimichimayati kantakapolam)	Individual	Kaṭu	0
11	Secretion from nose (Srāvayati nāsikām)	Individual	Kaṭu	0
12	Lacrimation (Srāvayatiakṣi)	Individual	Kaṭu	0
13	Distasteful (Arociṣṇu)	Individual	Tikta	56.67
14	Dryness of mouth (Vaktrampariśōṣayati)	Individual	Kaṣāya	63.3
15	Feeling of stiffness in tongue (jadayati jihwām)	Individual	Kaṣāya	30
16	obstructive feeling in throat (kantambadhnāti)	Individual	Kaṣāya	60

Table 2: Direct responses on Rasa - frequency distribution

Rasa reported	Total respondents (%)
Kaṣāya	76.67
Tikta	40

Table 3: Direct responses on Anurasa - Frequency distribution

Anurasa reported	Total respondents (%)
Madhura	23.3

DISCUSSION

According to Ayurveda, every substance is made up of Pancamahābhūta.¹² The loss of equilibrium of Tridoshas (regulatory functional factors in the body) is the cause for diseases.¹³ These Tridoshas are also constituted by Pancamahābhūtas. So, the knowledge about the pancabhoutik constitution of the dravyas is indispensable to correct the vitiated doshas and to maintain health. In order to get the preliminary awareness about the pancabhoutik constitution of an anukta dravya, the easy way is to find out its Rasa. For samāna pratyayārbhdha dravya, we can assume the other ayurvedic pharmacological principles from its Rasa.

Here in the Rasa analysis, 63% of volunteers experienced dryness in mouth and 60% of them experienced obstructive feeling in throat. These are the unique feature of Kaṣāyārasa. 57% of the volunteers experienced distaste which is the unique character of Tikta rasa implies the leaf of the drug possess Kaṣāya rasa followed by Tikta rasa. 30% of participants experienced Madhura as anurasa. Kaṣāya rasa mitigates Kapha, Pitha and Rakta quickly, restores normal color to the skin, heals ulcers and scratches out adhering materials.¹⁴ Tikta rasa has healing property, anti-poisonous action, anti-microbial action, cleansing effect and it decreases excess fat in the body. Both these Rasas are Ruksha (dryness) in nature and dries up kleda.¹⁵

The plant *Bridelia stipularis* (L.) Blume is reported to be used for sores in mouth, āmavāta, jaundice, anemia, cough, asthma etc. which is activities or therapeutic indications assigned for Kaṣāya and tikta rasa substances in Ayurveda. Also, anti-microbial, anti-inflammatory, hepatoprotective, antioxidant, anti-diabetic activities of this drug are proved through various experimental studies.¹⁶ Most of the reported ethno medicinal claims and experimental findings are concordant with the activities attributed to Kaṣāya and Tikta rasa. Madhura anurasa give a hint that the drug might not be too much Langhana.

Vīrya of a drug is that which is responsible for drug action. Here the endothermic reaction showed by the leaf powder in distilled water implies that the drug has Śītavīrya. From Rasa analysis also it is assumed that the Vīrya will be Śīta.¹⁷

CONCLUSION

Bridelia stipularis (L.) Blume is an extra-pharmacopoeial drug used for the treatment of various ailments among tribes. The current study reveals the Rasa of the plant as Kaṣāya rasa followed by Tikta rasa with madhura as anurasa and Vīrya as Śīta.

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