

## Pharmacognostical and Pharmaceutical evaluation of Vaitarana Basti

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### ABSTRACT:

**Introduction:** ‘Vaitarana Basti’ is a type of Asthapana Basti, in which Guda, Saindhava, Amlika Kalka, Taila and Gomutra is used. Though it is not having decoction, it is Shodhana type of Basti indicated in Anaha, Shula and Amavata.

**Materials and methods:** Raw drugs of Vaitarana Basti as per the reference in Chakradatta were purchased from the local market of Jamnagar, Gujarat. It was prepared as per the standard conventional preparation procedure at Department of Panchakarma, ITRA, Jamnagar. The freshly prepared final product was then subjected to pharmacognostical and physicochemical analysis. Pharmacognosy of Vaitarana Basti was carried out by preparing a glass slide and cover slip. Then this slide was observed under the Carl Zeiss Trinocular microscope. **Results:** Pharmacognosy study of Vaitarana Basti revealed presence of acicular crystals, fibers and mesocarpal cells with brown content of tamarind, oil globules of castor oil were identified. Analytical study showed 9 spots at 254 nm and 1 spot at 366 nm. The specific gravity of sample was found as 1.101 and the density as 1.0814 gm/ml. **Discussion and conclusion:** Results obtained signifies contents of Vaitarana Basti and The parameters presented in paper may serve as standard reference for the quality control analysis of Vaitarana Basti.

**KEYWORDS:** Vaitarana Basti, Pharmacognosy, Pharmaceutics.

### I. INTRODUCTION:

‘Basti’, one of the five therapeutic procedures in ‘Panchakarma’ explained as Ardha Chikitsa (half of the whole treatment). It is always compared with conventional evacuation and retention enema. According to Ayurvedic principles ‘Basti’ plays a much more vital role in the disease management than conventional enema.

‘Vaitarana Basti’ is a type of ‘Aasthaapana Basti’, which is not having decoction. It is explained by Acharya Chakradatta, Vrundamadhava and Vangasena. It has Guda (Jaggery) 24 gms, Saindhava (Sodii chloridum) 12 gms, Amlika (Tamarindus Indica Linn.) 48 gms, Eranda Taila (Castor oil) quantity sufficient and Gomutra (Cow’s urine) in quantity of 200 ml for single dose of administration.

The name Vaitarana itself signifies the name of a river which can bring back dead to live. It is indicated in Anaha, Shula, Amavata, Gridhrasi, Urustambha, Vishama Jwara, Klaibya, etc.

It possesses properties like Langhana, Rukshana, Ushna, Tikshna like properties, which counterattacks in disease like Amavata, where Ama is gets lodged in Srotasa. Properties of Basti might clear the minute channels and may helpful in breaking the pathology. Amavata can be correlated with rheumatoid arthritis, in which DMARDs, NSAIDs, Analgesics are to be used in contemporary science. Tamarind present in Basti has got anti-inflammatory activity. It is known to inhibit coclooxygenase-2 (COX-2) expression and 5-lipoxygenase biosynthesis. Activation of the opioidergic mechanism at peripheral and central level helps in analgesic activity. Jaggery contents many biological active constituents which has got analgesic and anti inflammatory activity. Now to understand the mechanism of Vaitarana Basti as how does it successfully mitigate Amavata (Rheumatoid Arthritis) an attempt has been made to get some clue in understanding the Basti liquid as a whole in terms of its microscopic analysis and physico-chemical analysis. Addition to this pharmacognosy of Vaitarana Basti was done to authenticate the ingredients used.

## II. MATERIALS AND METHODS:

### Collection of raw drugs:

Raw materials required for preparation of Vaitarana Basti were purchased from the local market (Shree Chandrabrothers store) of Jamnagar

and Eranda Taila and Saindhava were procured from pharmacy of ITRA, Jamnagar, Gujarat. The ingredients, quantity and parts used in the preparation of the final products are listed in Table No. [1].

**TABLE 1 - Contents of Vaitarana Basti**

No.	Name	Latin name/English name	Part used	Quantity	Quantity in gms/ml
1.	Saindhava	Rock salt	Whole	1 Karsa	12 gm
2.	Amlika	Tamarindus indica Linn.	Fruit Pulp	1 Pala	48 gm
3.	Guda	Jaggery	Whole	½ Pala	24 gm
4.	Gomutra	Cow's urine	Whole	1 Kudava	200 ml
5.	Eranda Taila	Ricinus communis Linn.	Seed Oil	Ishata	Qs.

### Preparation of Vaitarana Basti:

After collection of all the ingredients, Vaitarana Basti was prepared at Department of Panchakarma, ITRA, Jamnagar. Detailed description of its preparation is as follows;

Melted liquid form of Guda was taken and filtered with clean cloth is added slowly into the mortar. Then finely powdered Saindhava is added in the mortar and triturated with the pestle. After it has been mixed well, lukewarm Eranda Taila is added by continuous triturating. Once the mixture was thoroughly mixed, paste form of seedless tamarind is added and triturated. Lastly fresh collected Gomutra is added slowly in the mixture and triturated for while. The liquid was finally filtered and is transferred into a clean vessel for study.

### Pharmacognostical study:

Vaitarana Basti was observed and authenticated by the Pharmacognosy department of the institute. The identification of individual drugs was done on the basis of microscopic features of the finished product. Here, pharmacognostical evaluation of Vaitarana Basti was carried out by preparing a glass slide and cover slip. Then this slide was observed under the Carl Zeiss Trinocular microscope. The microscope was attached with a camera. Then photographs of Vaitarana Basti slide (finished product) at 40x magnification were taken without staining and after that with-staining (phloroglucinol and HCl staining).

### Organoleptic Study:

Vaitarana Basti liquid was observed for the organoleptic characters like color, odor and taste at the pharmacognosy laboratory of the institute.

### Pharmaceutical Evaluation:

Vaitarana Basti was subjected to testing of certain important Physico-chemical parameters (as per API) at the institutional pharmaceutical laboratory; like specific gravity, pH and density to understand characteristics of this medicated liquid.

High Performance Thin Layer Chromatography (HPTLC) study of Vaitarana Basti was performed by using Toluene: Ethyl acetate (9:1 v/v) solvent system and observed under short UV (254 nm) and long UV (366 nm). The instruments and methods were as under,

- Application Mode - CAMAG Linomat 5- Applicator
- Filtering System - Whatman Filter paper No.1
- Stationary Phase - MERCK HPTLC Silica Gel 60 F254
- Application (Y axis) Start Position - 10mm
- Sample Application Volume - 10µL
- Development Mode - CAMAG TLC Twin Trough Chamber
- Chamber Saturation Time - 30 Minutes
- Mobile Phase - Petroleum ether: Diethyl ether : Acetic acid (9:1:0.1v/v)
- Visualisation - @254nm, @366nm and (after derivatization)
- Derivatization Mode - CAMAG-Dio tank for about 1 minute Drying Mode, Temperature - TLC Plate Heater preheated at 100±50°C

- Drying Time - 3  
Minutes

### III. RESULTS:

Characteristics of Vaitarana Basti:  
Microscopic evaluation of Vaitarana Basti was

conducted and microphotographs were taken as seen, Photo - 1.1 Vaitarana Basti, Photo - 1.2 Mesocarpal cells with brown content of Tamarind, Photo - 1.3 Fibres of Tamarind, Photo - 1.4 Oil globules of Eranda Taila, Photo-1.5 Acicular crystals of Tamarind.



Photo 1.1 – Vaitarana Basti

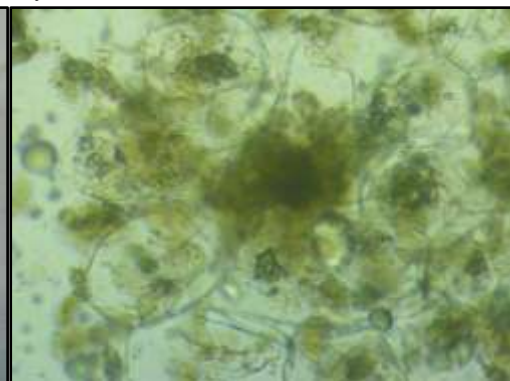


Photo 1.2 – Mesocarpal cells with brown content of Tamarind

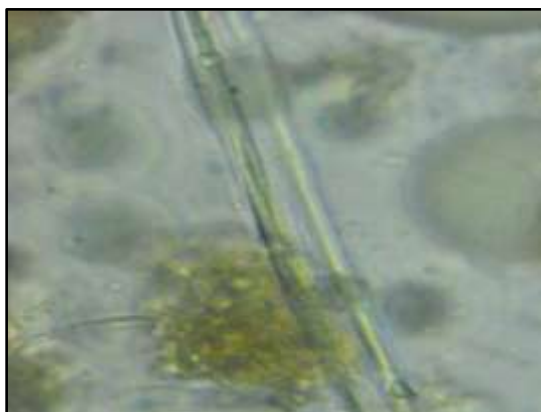


Photo 1.3 – Fibres of Tamarind

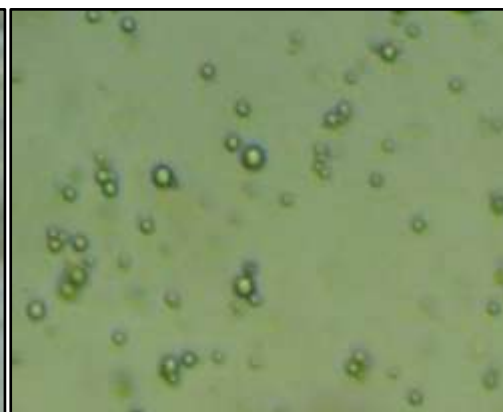


Photo 1.4 – Oil globules of Eranda Taila



Photo 1.5 – Acicular crystals of Tamarind

Organoleptic characters of Vaitarana Basti, it was a Creamish white colored liquid with sour odour and salty taste. Details of physicochemical parameters are mentioned in

Table-[2]. HPTLC profile of methanolic extract of Vaitarana Basti was done and details of number of spots and Max R<sub>f</sub> value are given in Table-[3] and HPTLC profile is given in Photo 2 showing

HPTLC: Densitogram at 254 nm and Photo 3

HPTLC: Densitogram at 366 nm.

**TABLE 2 - Physico-chemical parameters of Vaitarana Basti**

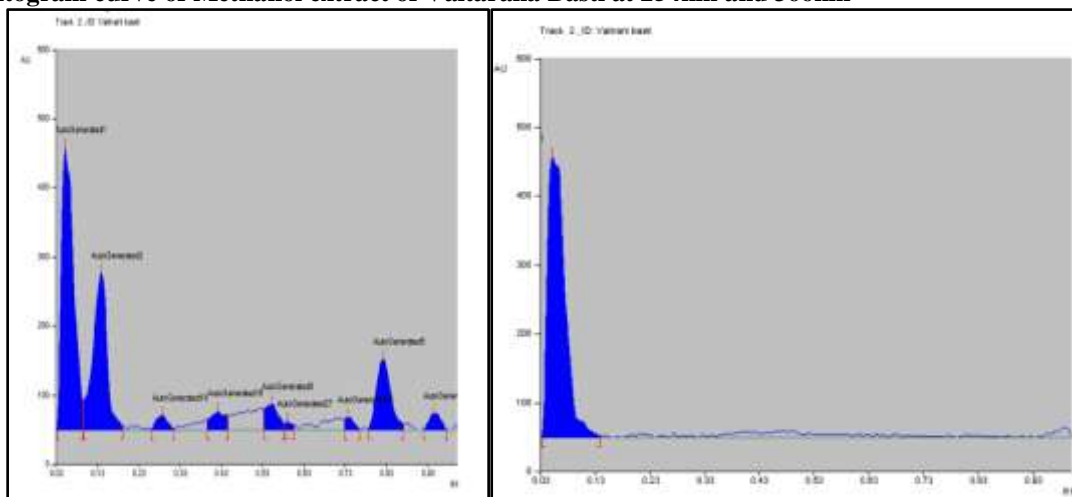
No.	Physiochemical parameter	Vaitarana Basti
1	Specific Gravity	1.101
2	pH	6
3	Density	1.0814 gm/ml

Analytical study of Vaitarana Basti has showed 9 spots and 1 spot at 254 nm and 366 nm respectively.

**TABLE: 3 – R<sub>f</sub> Values of Vaitarana Basti**

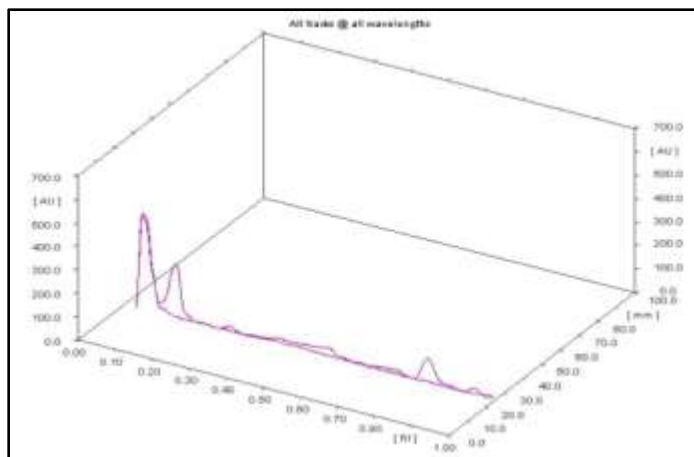
Wavelength	No. of Spots	Max R <sub>f</sub> values
Short UV (254 nm)	9	1.46, 2.11, 2.43, 2.73, 3.07, 4.24, 11.64, 25.78, 46.53
Long UV 366 nm	1	100

Densitogram curve of Methanol extract of Vaitarana Basti at 254nm and 366nm



**Photo 2: Peaks at 254 nm**

**Photo 3: Peak at 366 nm**



**Photo 4- 254 nm and 366 nm 3D**

#### IV. DISCUSSION:

Pharmacognosy study of Vaitarana Basti revealed Acicular crystals, fibers and mesocarpal cells with brown content of Tamarind, oil globules of Eranda Taila were identified under microscope. The physiochemical parameters analyzed found to be within normal reference range. Physiochemical study showed specific gravity of 1.101 and density as 1.0814 gm/ml. The HPTLC finger printing of Vaitarana Basti at 254 and 366 nm wavelengths was done to record and standardize the solution for future references. This study to a certain extent has helped in throwing light on understanding probable action of Vaitarana Basti in Amavata (Rheumatoid Arthritis).

#### V. CONCLUSION:

The Pharmacognostic study has showed presence of fibres, mesocarpal cells and oil globules in Vaitarana Basti signifying that the contents of the ingredients of Vaitarana Bati have been imparted to final solution. Pharmaceutical study showed the acidic nature and other characteristics of the solution making it possible to understand how Vaitarana Basti might work on patients of Amavata. The results of this study may be used as a reference standard and as identification tools for quality assessment in further research undertakings of its kind.

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