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ANALYTICAL STUDY OF TILA TAILA AND MURCHCHIT TILA TAILA

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Abstract:

An Ayurvedic preparation involves multi step procedures with many herbal and mineral drugs. The complexity increases the difficulty in standardization and subsequently quality control of the finished product. Bhajshajya Ratnavalli has described Murcchana as a prerequisite all Sneha preparation first time. Murcchana is a special pharmaceutical procedure by which bad odour, colour of sneha is removed along with amadosha. Though the amadoshata is not clearly defined, probably the moisture content existing in fat or the factor which inhibits the absorption (internal or external) of sneha may be co-related for this matter. no doubt, haridra, manjistha imparts good color of the oil. Other ingredients may help in contribution of good smell to the sneha mean while increasing the medicinal property tool and it acts as antioxidant and enhances the shelf life of the finished medicated oil.

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INTRODUCTION

"Bhaisajya Kalpana is an art or science of preparing and dispensing of medicine". Various pharmaceutical process which are known as "Samskara" and Ayurveda all the drugs have been subjected to various Samskara for Gunantravadhana i.e. induction of new proper or improving the existing one so that the drug became more effective it is elaborately elucidated with an account of following technique¹. Literal Meaning of the word "Murchhana" is intoxicating, exillaring, strengthening, augmenting, to penetrate, to enhance, to spread over. Murchhana is a special pharmaceutical procedure before subjecting the drug to Sneapaka, it is considered as one of the Samskaras of Sneha By this particular Samskara Sneha acquired specific pharmaceutic as well therapeutic properties. Murchhana Samskara is applicable to both taila and ghrita.²

OBJECTIVE OF MURCCHANA:

- Removal of "Ama" which can be correlated to the moisture contents and directly related to rancidity problems.
- Removal of bad odour and foul smell of crude oil.
- Sneha will acquire the capability to receive more active principles.
- Stability of the Sneha is also supposed to increases.
- Imparts color and odour to the oil.
- May alter the solubility and absorption of the finished which is desired to get maximum therapeutic value.

Tila Taila Murchhana⁴

Reference: B.R.jwara chikitsa prakran 5/1286-1287

Ingredients:

Sneha Dravya - 1 Part

Kalka Dravya - 1/16th Part Manjistha

- 1/64 part each of Haridra, Lodhra, Musta, Nalika, Amalaki, Haritaki, Bibhitaki, Ketakipushpa (Suchi Pusta), Vatankura, and Hrivera.

Procedure for Sneha Murchhana:

1. Sneha is warmed and allowed to cool. (To remove the moisture content).

2. Kalka Dravya (according to Sneha Nature) is added slowly and gently to the vessel containing oil and mixed.
3. Equal quantity of water (on Taila) is added and constant stirring for mixing purpose.
4. Sneha paka is carried in Mandgni or 3 days (intermittent heating).
5. After the Sneha Siddhi, Lakshanas, Sneha is filtered and collected in glass bottles.

Precaution during sneha Murchhana

1. Sneha Murchhana should be done over Mandagni.
2. Kalka should be wetted before adding on Sneha to avoid excive burning of Kalka Dravya.
3. Kalka Dravya should be used as Yuvakuta (some scholar mentioned that Kalka Dravya should be Churna.)

Table no 2.6

Contribution of Murchhana dravya with their chemical composition ^{5,6,7,8,9,10}

Sr. No.	Name and Latin Name of the Drug	Contribution with Murchhana	Chemical Constituents
1.	Manjista consists of root and stem of <i>Rubia cordifolia</i>	Colouring of the oil	Colouring matter purpurence, xanthine, Alizarine (orange red)
2.	Haridra consists of rhizome of <i>Curcuma longa</i>	Colouring and antifungal	Alkaloid curcumine, essential oil.
3.	Lodhra consists of stem berk of <i>Symplocos racemosa</i>	Gives good odour	Alkaloid loturine and coloturine
4	Musta consists of rhizome of <i>Cyperus rotundus</i>	Increase the acid value and gives good odour	Unstable alkaloids and essential oils
5	Nalika consists of stem berk of	Increase acid value and gives good	Essential oils, cinnamic

	Cinnemomum tamala	odour	aldehydye.
6	Amalaki consists of Dried fruit's pericarp of Emblica officinalis	Increase acid value, slubility of drugs	Vit-E, essential oil and phosphatides
7	Haritaki consists of Dried fruit's pericarp of Terminalia chebula	Increase solubility of active principles	Tannin, Chebulic acid
8	Bibhitaki consists of Dried fruit's pericarp of Terminalia bellirica	Increase solubility of active principles	Tannin, galic acid, alleagic acid.
9	Ketaki consists of Inflouescence of Pandanus odoratisimu	Gives good odour	Esential oil-methyl ether, Benzyl benzoate & aldehydes
10	Hriversa consists of Whole plant of Valeriana hardwickii	Gives good odour	Vitamin E, glycosides, essential oils
11	Vata consists of Rhizopora, Tender buds of Ficus bengalensis	Gives good odour	Glycimic principles

The fatty acid concentration after murchhana which may helps in micelle formation, which may from bonds with the water soluble constituents which are supposed to derive from Drava dravya which provide an oleaginous preparation with better therapeutic efficacy and because of murchhana degree on dissolution of bioactive constituents will be enhanced.

According the excellence of properties of sneha both ghrita, taila establishes its own superior position with ample scientific explanlatis ghrita has the power to assimilate effectively the properties of other substance with retaining its own properties taila when mixed with other substance assimilates the properties of others and give up its own qualities together.

ANALYTICAL STUDY

The concept of standardization was in fact as thought now, not a new one to Ayurveda. If it refers to the classics like Sushruta Samhita¹¹ and Vagbhat¹² this fact will be very clear. The parameters

which they adopted for quality evaluation were different and mainly based on the organoleptic characteristic of the drug or formulation. The standardization of the finished product is essential to **analyze** the raw material, inter mediated and finish product by applying various parameters and then to fix suitable standards so that quality of the product can be established here. The word 'Analyze' means the detailed examination, which reveals the minor, but important aspects regarding the drug.

▪ **Analysis of the Raw materials:**²²

All the above drugs taken and in a dry form than powdered it in grinded in mixer a passed through 60 # than analyzed.

Parameter Employed for the analysis of murchchana dravya^{12, 13,14,15,16,17,18,21}

- (i) Description Organoleptic test.
- (ii) Determination of foreign matter
- (iii) Determination of loss on drying at 105⁰C
- (iv) Determination of Ash value
- (v) Determination of Acid insoluble ash
- (vi) Determination of water soluble extractive
- (vii) Determination of Alcohol soluble extractive
- (viii) Qualitative chemical tests

(2) Parameters employed for the analysis of crude Tila taila (sesame oil) and murchchit tila taila: ^{12, 13,14,15,16,17,18,21}

- (i) Organoleptic examination
- (ii) Determination of loss on drying at 105⁰C
- (iii) Determination of pH using pH paper
- (iv) Determination of specific gravity at 25 c
- (v) Determination of Ash value
- (vi) Determination of Refractive index at 25 c
- (vii) Determination of Solubility in different organic solvent
- (viii) Determination of Acid value
- (ix) Determination of peroxide value
- (x) Determination of Saponification value
- (xi) Determination of Iodine value

- (xii) Determination of Ester value
- (xiii) Determination of Unsaponifiable Matter
- (vix) Test for the identification of sesame oil
- (xv) Kries test for rancidity
- (xvi) Test for the presence of Arachis oil in sesame oil
- (xvii) Chromatographic techniques like TLC
- (xviii) Determination of Free fatty acid as oleic acid

TABLE-4

**TABLE SHOWING THE ORGANOLEPTIC CHARACTERS OF POWDER
OF TILA TAILA MURCHCHANA DRAVYAS**

Sr.No.	drug	Colour	Odour	Taste	Texture
1.	Manjistha	Pink	Characteristic	Pungent	Fine
2.	Haridra	Yellowish	Characteristic	Slight bitter	Fine
3.	Lodhra	Whitish buff	Characteristic	Astringent,bitter	Fine and gritty
4	Musta	Brownish	Not Characteristic	Not	Smooth
5	Tamal patra	Greenish	Aromatic	Slightly sweet	Smooth
6	Haritaki	Dusty brown	Not Characteristic	Astringent	Smooth
7	Bhibhitaki	Dark brown	Not Characteristic	Astringent	Smooth
8	Amalaki	yellowish	Not Characteristic	Sour and astringent	Smooth
9	Hribera	Brown	Characteristic	Sweet	Smooth
10	Ketaki puspa	Creamish	Aromatic	Sweet	Smooth
11	Vatankur	Brownish	Not Characteristic	Astringent	Smooth

TABLE-5

**TABLE SHOWING RESULT OF PHYSOCOCHEMICAL ANALYSIS OF
TILA TAILA MURCHCHANA DRAVYAS**

Sr. no.	drug	Foreign matter(%w/w)	Loss on drying (%w/w)	Total ash (%w/w)	Acid insoluble ash(%w/w)	Water soluble Extractive (%w/w)	Alcohol soluble Extractive (%w/w)
1.	Manjistha	1.05	2.4	7.8	0.45	24.98	7.0
2.	Haridra	NIL	2.51	7.83	0.79	14.34	7.1
3.	Lodhra	NIL	3.08	8.9	0.65	34.12	18.09
4	Musta	1.52	2.5	5	2.43	13.21	10.1
5	Tamalpatra	3.7	8.1	3.54	0.85	17.03	13.68
6	Haritaki	5.12	4.5	6.2	0.75	70.06	58.54
7	Bhibhitaki	2.04	5.78	6.01	0.56	59.34	36.45
8	Amalaki	3.32	4.9	6.21	1.90	70.41	57.90
9	Hribera	2.95	2.45	5.56	0.87	11.37	5.54
10	Ketaki puspa	1.58	3	-	-	-	-
11	Vatankur	NIL	1.6	-	-	-	-

TABLE-6.

**TABLE SHOWING QUALITATIVE TESTS FOR DETECTING THE PRESENCE OF
BIOCONSTITUNENTS OF TILA TAILA MURCHCHANA DRAVYAS**

Sr. No	drug	Alkoloids	Tanins	Terpenoids	Sapoinis	Ascorbic acid	Glycoside	Volatile oil	sugars
1.	Manjistha	-	-	-	-	-	+	-	-
2.	Haridra	-	-	-	-	-	-	+	-
3.	Lodhra	+	-	-	-	-	-	-	-
4	Musta	-	-	+	+	-	-	-	+
5	Tamalpatra	-	-	-	-	-	-	+	-
6	Haritaki	-	+	+	+	-	-	-	+

7	Bhibhitaki	-	+	+	-	-	-	-	+
8	Amalaki	-	+	+	+	+	-	-	+
9	Hribera	-	-	-	-	-	-	+	-
10	Ketaki puspa	+	-	-	-	-	-	+	-
11	Vatankur	-	-	-	-	-	-	-	-

TABLE 7

ORGANOLEPTIC CHARACTERISTIC

Characteristic	TILA TAILA	MURCHCHIT TILA TAILA
Colour	Yellow	Dark orange
Odour	Characteristics of Tila	Aromatic smell
Taste	Characteristics of Tila	Astringent
Touch	Oily	Oily
Appearance	Viscous	Viscous dark red
Clarity	Clear	Clear

TABLE-8

PHYSICOCHEMICAL PARAMETERS FOR TILA TAILA/MURCHHITA TIALA TAILA

Sr. No.	Parameters	TILA TAILA	MURCHCHITA TIALA TAILA
1.	Loss on drying at 105°C% w/w	0.027	0.010
2.	Specific gravity at RT.	0.9137	0.9140
3.	Total Ash% w/w	0.0073	0.020
4.	pH using pH paper	4-4.5	6
5.	Clarity	Clear	clear
6.	Appearance	viscous	Viscous dark red
7.	Refractive index	1.4740	1.4750
8.	Acid Value	3.28	2.25
9.	Free Fatly acid as oleic acid%	1.14	1.62

	w/w		
10.	Saponification value	205	207
11	Iodine Value% w/w	84	92
12.	Peroxide value	6.17	3.78
13.	Ester value% w/w	202.7	203.3
14.	Unsaponifiable Matter	1.7524	1.88
15.	Rancidity test% w/w	-ve.	-ve.

TABLE-9

SOLUBILITY IN DIFFERENT ORGANIC SOLVENTS

Sr. No.	Solvent	TILA TAILA	MURCHCHITA TIALA TAILA
1.	Chloroform	++	++
2.	Petroleum ether	++	++
3.	Diethyl ether	++	++
4.	Carbon disulphide	++	++
5.	Alcohol	+	+
6.	Water	-	-

(++) Highly soluble, (+) sparingly soluble, (-) insoluble.

Thin layer chromatography Analysis: ^{19, 20, 22}

(A) *Solvent System: Toluene: Diethyl ether (93:7)*

Extract: Unsaponifiable matter.

Tank Saturation: 30 min.

Derivatisation: Anisaldehyde sulphuric acid

Visualizations: Day light

Conditions: After Spraying the plate was heated at 110°C for 10 min.

TABLE-10
COMPARATIVE SPOTS OBTAINED AFTER DERIVATISATION

Sr. No.	Name of the sample	No. of Spots	Rf.
1.	TILA TAILA	5	0.3703, 0.2222, 0.3185, 0.4444, 0.5555, 0.8148
2.	MURCHCHIT TILA TAILA	5	0.3703, 0.2222, 0.3132, 0.4592, 0.5629, 0.8296

DISCUSSION:

According to the excellence of properties of sneha both ghrta, taila establishes its own superior position with ample scientific explanation. Ghrta has the power to assimilate effectively the properties of other substances while retaining its own properties. Taila, when mixed with other substances, assimilates the properties of others and gives up its own qualities together.

Oils are liquid in consistency and contain unsaturated fatty acids. On hydrogenation, they produce excessive foam on completion of paka due to their conversion from unsaturated fatty acids to saturated fatty acids.

The loss on drying is considered more in tila taila, compared to murchchit tila taila, indicating its content. More moisture may be deteriorated early compared to murchchit tila taila. The P^H value and specific gravity increase after murchchana process due to ingredients used in murchchana process. It may be presumed that due to the process of sneha paka, more active principles may get dissolved.

Acid value indicates the amount of free fatty acids present in oil and fat. A high acid value in the oil may lead to early rancidity of the oils. After murchchana, acid value decreases compared to tila taila. High peroxide value in the oil may lead to early rancidity of the oil due to exposure to air. After murchchana process, peroxide value is also decreased due to less exposure to air or moisture. It indicates that it may remain stable for a long time.

The iodine value increased after murchchana. It increases may be due to oxidation across the double bonds of unsaturated fats.

CONCLUSION:

After analysis of all the data it indicated that Murchchita Tila Taila may be delicate long shelf life. It may be more effective because during the murchchita process active chemical constituents dissolved in it.

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