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Pharmaceutical standardisation of Jingini Taila prepared from stem bark of Jingini [Lannea coromandelica (Houtt.) Merr.]

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ABSTRACT
In the chunekar commentary on BhavaprakashaNighantu,Jingini Taila is indicated in PuraanaVrana[Chronic ulcer]. This is a formulation where single herb called Jingini identified as Lanneacoromandelica Houtt. (Merr.) belongs to Anacardiaceae family is used. The Jingini Taila was prepared according to the procedure mentioned in Ayurveda Pharmacopoeia of India. For the analysis organoleptic characters and Physico-chemical Parameters are carried out. Organoleptic characters were analysed in Dravyaguna laboratory Sri Sri college of Ayurvedic Science and Research, Bengaluru and for analysis of Physico-chemical parameters sample was given to Sriveda Sattva Pvt. Ltd. Bengaluru. The total oil obtained was 70 %, loss is 30 %. The organoleptic characters of JinginiTaila are dark brown color, CharacteristicOdor, Smooth texture and liquid appearance. The results on analysis of physicochemical parameters are Loss on drying 0.10 %, Refractive index 1.472, Specific density(g/ml) 0.9461, Saponification value 196.47, Iodine value 74.61, Acid value 2.93, Peroxide value 7.2978. The results obtained can be considered as the preliminary standards for the preparation of Jingini taila.

Key words: Jingini, Taila, PuraanaVrana, Chronic ulcer.

I. INTRODUCTION

Taila Kalpana is one among the various Bheshajakalpanas mentioned in the Ayurveda Granthas. In Chunekar commentary on BhavaprakashaNighantu one such Taila Kalpana is mentioned, indicated in Puraanavrana[Chronic ulcer] called as Jingini Taila [1].

In this preparation only drug that is used is Jingini identified as Lanneacoromandelica (Houtt.) Merr. Belongs to Anacardiaceae family. It is a moderate sized to large deciduous tree having spreading crown and stout branches, found in greater parts of India. Bark is grey or whitish, smooth exfoliating in irregular round plaqes. Heartwood is light pinkish red to light red, turning red or brownish red with age. Leaves are compound with alternate phyllotaxy, imparipinnate, crowded at edges. Leaflets are oblong and ovate opposite or sub opposite phyllotaxy. Inflorescence male compound raceme, Female simple pubescent racemes. Flowers are small, yellowish or purplish, unisexual. Fruit is red, compressed and reinform, 1 seeded.Seeds are compressed [2].

Jingini Taila has no standards listed in the Ayurveda Pharmacopoeia of India and Ayurveda formulary of India. There are no research studies on hand regarding the preparation or analysis of Jingini Taila. Therefore, this is an effort to standardise the Jingini Taila preparation.

II. MATERIALS AND METHODS

A. Collection of drug and authentication

Jingini stem bark was collected from the Brahmavara forest Udupi, Karnataka and authentication was carried out by Pharmacognostical study. A routine use of such scientific techniques will lead to standardization of the Ayurvedic product to a certain extent and would definitely help in building confidence in use of these products [4].

Table 1: Drug used in Jingini Taila

Drug	Botanical name	Part used
Jingini	Lanneacoromandelica (Houtt.) Merr.	Stem bark

The steps of raw drug analysis are

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Organoleptic study
The powder of drug evaluated for organoleptic characters like color, odour, texture and appearance

Powder microscopy
Powdered drug was studied microscopically and microscopic characters of drugwere noted. To perform powder microscopy, powder of stem bark of Jingini was taken, triturated well so that it become fine power. Fine powder was taken in a test tube and added 1% Phloroglucinol solution. Test tube was slightly warmed on spirit lamp. Then 1-2 drops of sulphuric acid were added warm again. Few drops of solution were added and placed on glass slide. The slide was mounted with cover slip and structures were observed unde the microscope and photos were taken using digital mobile camera.

B. Method of Preparation of JinginiTaila
Jingini Taila prepared according to general preparation method of Taila Kalpana mentioned in Ayurveda Pharmacopoeia of India. The ratio mentioned is 1:4:16 i.e, 1 part of Kalka, 4 parts of Sneha and 16 parts of Dravadravya[3]. As kalka, Jingini Twak (Bark) kalka, as SnehaTilaTaila and as DravadravyaJingini Kashaya was used in the preparation. Jingini Kashaya was prepared using one part of Jingini Twak(Bark) and 14 parts of water, reduced to 1/4th hence 400 ml of Jingini Kashaya is used in a preparation.

Table 2:Ingredients and quantity of Jingini taila.

Sl.no	Ingredient		Quantity
1.	Kalka	Jingini kalka	25 grams
2.	Sneha	Tilataila	100 ml
3.	Dravadravya	Jingini Kashaya	400 ml


Ingredients of Jingini taila


Jingini *Taila* on process of preparation


Jingini *Taila* - Final product

C. **Analysis**
Analysis of Organoleptic characters like Color, Odour, Texture and Appearance were carried out. For analysis of Preliminary Physico chemical parameters including Loss on drying, Refractive index, Specific density, Peroxide value, Acid value, Iodine value, Saponification value[3]the sample was given in Sriveda Sattva Pvt. Ltd. Bengaluru.

III. OBSERVATION AND RESULTS

In the present study for the preparation of Jingini Taila 100 ml of TilaTaila was used. The final product obtained was 70 ml.

Powder microscopy
Powder microscopy of stem bark of Jingini [Lanneacoromandelica (Houtt.) Merr.] showed the presence of the Tracheid, Pigment cell, Cork cell, Fragment of cork, Fibre, Fragment of xylem, Parenchyma cells, Sclerids, Lacticiferous tubules, Starch granules, Sclerids, Parenchyma cells.

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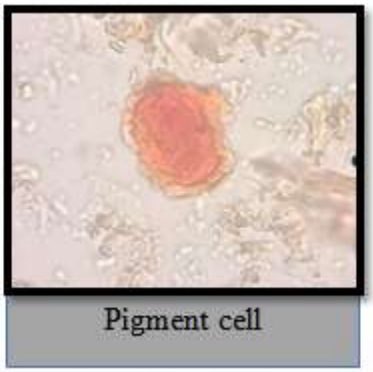
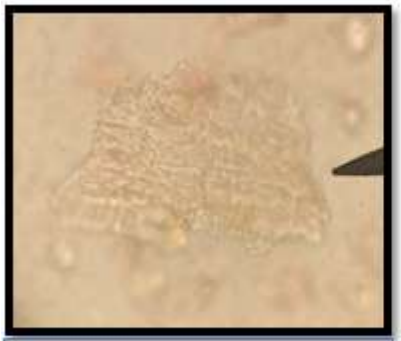
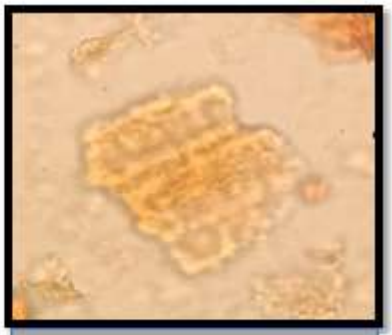
Tracheid

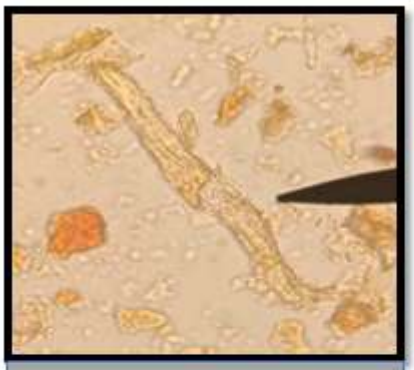

Pigment cell

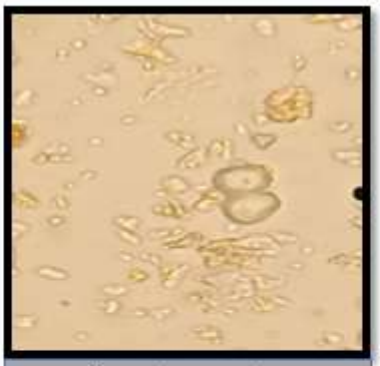

Corkcell


Fragment of cork


Fibre


Fragment of xylem


Lactiferous tubules


Starch granules


Sclerids


Parenchyma cell

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Organoleptic characteristics

Table3: Organoleptic characteristics of Jingini Taila

Color	Dark brownColor
Odour	Characteristic [Woody Odor]
Texture	Smooth
Appearance	Liquid

Preliminary Physico chemical characteristics of Jingini Taila

Table 4: Preliminary Physico chemical characteristics of JinginiTaila

Loss on drying	0.10 %
Refractive index	1.472
Specific density	0.9461
Saponification value	196.47
Iodine value	74.61
Acid value	2.93
Peroxide value	7.2978

IV. DISCUSSION

Taila Kalpana is one of the dosage forms that can be used for local application. As Local applications are quickly absorbable, protects the skin and promotes percutaneous absorption of incorporated drugs it is highly beneficial. In this preparation of Taila Kalpanadrug and media to some extent is taken and heated along with the oil at a desired temperature and for a certain period of time. Here, the principle is to transfer the active constituent of the drug according to its solubility [6].

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Standardization is another essential factor for ASU preparations in order to assess their quality For all the systems of medicine quality assurance is an integral part to ensure quality of medicament. In order to assess the quality standardisation is another essential factor [4]. For the quality assurance and standardisation, the parameters like organoleptic characteristics and preliminary phytochemical parameters of JinginiTaila are done which are discussed below:

Powder microscopic examination helps to authenticate the drugs mentioned in the yoga and there by exclude adulteration.

Powder microscopic examination helps to authenticate the drugs mentioned in the formulation and exclude adulteration.

Colour of the Taila depends on the drug from which Taila is prepared [4], here Jingini stem bark was dark brown in Color, hence the Color of the Jingini Taila was also same. Taila had a characteristic odour, that is similar to wood, which could be attributed to the drug's bark.

Refractive index is a parameter which denotes density of sample compare to air and liquid media [4],higher the refractive index higher is the chances of spoilage due to oxidation[5], JinginiTaila had the refractive index of1.472.

Saponification valueis the average molecular weight / chain length of all the fatty acids present or amount of all free fatty acids present in a sample. As free fatty acids are nascent so they are susceptible for formation of newer compounds in an attempt to get stabilized which has been seen in the form of changes in saponification after Snehapaaka. The amount of alkali needed to saponify a given quantity of oil will depend upon the number of COH group preset in it [4].Saponification value of JinginiTaila was 196.47.

Iodine value this parameter gives idea regarding degree of unsaturation of oil, greater the degree of unsaturation, higher will be the possibility of absorption and atmospheric oxidation leading to rancidity [4], Iodine value of JinginiTaila was 74.61

Acid value indicates the presence of free fatty acids in the oil which are responsible for rancidity of the compounds, higher the free fatty acid the more is the rancidity. This parameter helps to decide the shelf life of the oil [4], Acid value for JinginiTaila was 2.93.

Peroxide value gives a measure of the extent to which an oil sample has undergone primary

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oxidation[6].Peroxide value of JinginiTaila was 7.2978.

Utility of Jingini Taila:
Baahya Prayoga (External application) in Puraana Vrana, Ropanartha and YoniShodhanartha.[1]

Probable mode of Action:
Jingini has Kashayarasa,Teekshnaguna, Ushnaveeryaand Vranaropana [Twak] Karma[1]. Tannins and flavones are phytoconstituentspresent. Due these properties Jinginitaila might reduce the kledatva of the vranaand does promotes the fast healing of the PuraanaVrana [Chronic ulcer].

V. CONCLUSION

In the present study single herb is used in the Taila preparation, which makes the collection easier and can maintain the quality of the raw drug used. There are no standards for Jingini Taila in the Indian Ayurveda Pharmacopoeia or Ayurveda Formulary of India, and no research studies on the preparation or analysis of Jingini taila have been found. Hence Pharmaceutico analytical parameters used in this study can be used as standard of JinginiTaila for further studies and the preparation can also be taken up for clinical trials to prove its efficacy.

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