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Research Article

STANDARDIZATION OF MILAGAI TAILA, MENIT TAILA AND CIRAKAT TAILA

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<p>*Correspondence</p> <p>P. Devi Department of Pharmacognosy, K. M. College of Pharmacy, Uthangudi, Madurai, India</p> <p>DOI: 10.7897/2321-6328.02106</p> <p>Article Received on: 16/12/13 Accepted on: 31/01/14</p>	<p style="text-align: center;">ABSTRACT</p> <p>Milagai taila, Menit taila and Cirakat Tailas were prepared by Siddha formulary and were analyzed. The specific gravity, Saponification number, Acid number, Iodine number was respectively. The drug resolved into 2 spots in the solvent n butanol: acetic acid: water.</p> <p>Keywords: Tailas, milagai taila, menit taila and cirakat taila</p>
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INTRODUCTION

Tailas are medicated oils forming a group of drugs in Ayurvedic system of medicine. The principle is to extract the therapeutic compounds into oil. The method of preparation requires heating of oil with prescribed kashayas (decoction) and kalkas (powdered drug) according to formula. The tailas have the color; odor and taste of the drugs used, and also have the consistency of the oil. Generally they are used for abhyanga (external application) some of them are also used internally with anupanas. Mahalaksadi taila was prepared and analyzed. It is prescribed in sarvajvara (all types of fever). Taila are medicated oils. They are similar to ghirta, but are prepared with oils instead of ghee. Taila in Sanskrit means 'oils'¹⁻⁶. The term 'taila' is derived from the word 'Tila' which refers to the sesame seeds. Usually in the preparation of taila sesame oil is used excepting in a few preparations where coconut oil (or) neem oil are used. Rarely mustard oil, chaulmoogra oil etc., are also used. The preparation of tailam involves different oils in various medicines as the base material to extract the active chemicals from new drugs. Majority of Ayurvedic formulations use whole plants either alone or in combinations. The efficacy of the Ayurvedic formulation may vary with the use of the adulterants in the formulations. It is therefore important to establish characteristics of the raw material and finished Ayurvedic products with the help of physical and chemical methods. Now a days because of complexity and associated side effects with the usage of allopathic medicines, the majority of the world population is turning toward the alternative system of the medicine^{7,8}. Also the world Health Organization (WHO) has emphasized the need to ensure the quality of the medicinal plants products by using modern controlled techniques and applying suitable standards⁹.

MATERIAL AND METHODS

Milakait tailam

Plant profile

Capsicum

The chillis the fruit of plants from the genus *Capsicum*, members of the nightshade family, Solanaceae; chili originated in the Americas. After the Columbian Exchange, many cultivars of chili pepper spread across the world, used in both food and medicine. India is the world's largest producer, consumer and exporter of chili peppers. Among which the city of Guntur in Andhra Pradesh produces 30 % of all the chillies produced in India, and the state of Andhra Pradesh contributes to 75 % of all the chilli exports from India.

Medicinal uses

Capsaicin is a safe and effective topical analgesic agent in the management of arthritis pain, herpes zoster-related pain, diabetic neuropathy, post mastectomy pain, and headaches.

Black pepper

Black pepper (*Piper nigrum*) is a flowering vine in the family Piperaceae, cultivated for its fruit, which is usually dried and used as a spice and seasoning. The fruit, known as a peppercorn when dried, is approximately 5 mm (0.20 in) in diameter, dark red when fully mature, and, like all drupes, contains a single seed. Peppercorns, and the ground pepper derived from them, may be described simply as pepper, or more precisely as black pepper (cooked and dried unripe fruit), green pepper (dried unripe fruit) and white pepper (unripe fruit seeds). Black pepper is produced from the still-green unripe drupes of the pepper plant. The drupes are cooked briefly in hot water, both to clean them and to prepare them for drying. The heat ruptures cell walls in the pepper, speeding the work of browning enzymes during drying. The

drupes are dried in the sun or by machine for several days, during which the pepper around the seed shrinks and darkens into a thin, wrinkled black layer. Once dried, the spice is called black peppercorn. On some estates, the berries are separated from the stem by hand and then sun-dried without the boiling process. Once the peppercorns are dried, pepper spirit and oil can be extracted from the berries by crushing them. Pepper spirit is used in many medicinal and beauty products. Pepper oil is also used as Ayurvedic massage oil and used in certain beauty and herbal treatments.

Uses

Black Pepper (or perhaps long pepper) was believed to cure illness such as constipation, diarrhea, earache, gangrene, heart disease, hernia, hoarseness, indigestion, insect bites, insomnia, joint pain, liver problems, lung disease, oral abscesses, sunburn, tooth decay, and toothaches. The authenticity of the ingredients were checked and confirmed. The material was examined for probable adulterations and foreign matter adhering to the surface was removed. Organoleptic evaluation was used for identification of sensory characteristics like color, odor, taste, size, texture and fracture.

Milakait tailam

Ingredients

- Milakay 3500 g
- Tannir 21.5 lits
- Nallenney 1400 m.lits
- Milaku 35 g

Method of Preparation

Pound item 1 coarse and boil with item 2 and reduce the decoction to 1/8, and filter. Add to this decoction item 3 and powders of item 4 and heat to prepare tailam. Filter and take for use.

Important therapeutic usage

For use as bath oil in case of Nirccerippu Timirvatam, Utal Mantaikkuttu, Utalvali, Culai, Putaiculai, Coriciranku, Katataippu and Katukkuttu¹⁰⁻¹².

Menit tailam

Plant profile

Acalypha indica (English: Indian acalypha, Indian nettle, three-seeded mercury French: Ricinelle des Indes, oreille de chatte, herbechatte Tamil: Poonamayakki, Kuppaimeni) is a species of plant having catkin type of inflorescence. It occurs throughout tropical Africa and South Africa, in India and Sri Lanka, as well as in Yemen and Pakistan. It has possibly been introduced elsewhere as a weed. In West and East Africa the plant is used as a medicinal plant. It is a common herb growing up to 75 cm tall with ovate leaves. Flowers are green, unisexual found in catkin inflorescence. In West Africa the leaves are cooked and eaten as a vegetable. It is also browsed by cattle. This plant is held in high esteem in traditional Tamil Siddha medicine as it is believed to rejuvenate the body.

Uses

The juice extracted from the leaves, mixed with lime and applied on skin to cure diseases caused by Ringworm. Fresh juice of leaves mixed with oil and salt is used for Rheumatoid arthritis and to cure Scabies. Powdered leaves are used to

cure bedsores and infected wounds. The active medicinal compounds like Acalyphine and Triacetoneamine are extracted from this plant. They contain cyanogenic glucoside and alkaloids. The paste of the leaves can be applied to burns

Jatropha curca

It is a species of flowering plant in the genus *Jatropha* in spurge family, Euphorbiaceae, that is native to the American tropics, most likely Mexico and Central America. It is cultivated in tropical and subtropical regions around the world, becoming naturalized in some areas. The specific epithet, "curcas", was first used by Portuguese doctor Garcia de Orta more than 400 years ago and is of uncertain origin. Common names include Barbados Nut, Purging Nut, Physic Nut.

Uses

Leaves

The young leaves may be safely eaten, steamed or stewed. Cooked with goat meat, they are said to advantageously counteract its smell. Pounded leaves are applied near horses' eyes to repel flies in India. Hydrogen cyanide (HCN) is present in the leaves. The extracts of the plants are dangerous to use but water can easily release it over if not too much extract is applied.

Flowers

The species is listed as a honey plant. Hydrogen cyanide is present.

Nuts

Nuts can be construed for home cooking fuel in briquette form replacing charcoalized timber as in Haiti. Sometimes roasted and eaten, although they are purgative. They can be burned like candlenuts when strung on grass. HCN is present. Used as a contraceptive in South Sudan.

Seeds

Interest exists in producing animal feed from the bio-waste once the oil is expressed, as in the case with Haiti, where *Jatropha curcas* grows prolifically and animal feed is in very short supply. Similarly, Metsiyen in the Haitian culture dates back as a medicinal crop - thus the name "metsiyen"/"medsiyen". Some suggest it "calms the stomach". Some mention of Metsiyen being used to ward off evil spirits in past Haitian culture where voodoo has been losing adherents for Christian faith. Also used as a contraceptive in South Sudan. The oil has been used for illumination, soap, candles, the adulteration of olive oil, and making Turkey red oil. Turkey red oil, also called sulphonated (or sulfated) castor oil, is the only oil that completely disperses in water. It is made by adding sulfuric acid to pure *Jatropha* oil. It was the first synthetic detergent after ordinary soap, as this allows easy use for making bath oil products. It is used in formulating lubricants, softeners, and dyeing assistants. The seeds in the zone around Misantla, Veracruz are very appreciated by the population as food once they have been boiled and roasted. It is unclear if this is due to the existence of a non-toxic variety of *Jatropha* in Mexico and Central America, or if the seeds become edible once processed by cooking. It is also similarly reported that *Jatropha* seeds are edible once the embryo has been removed. Again it may be so because of these seeds coming from a local non-toxic variety. HCN is present.

Roots

Their ashes are used as a salt substitute. HCN and rotenone are present.

Bark

Used as a fish poison. HCN is present.

Latex

Strongly inhibits the watermelon mosaic virus.

Sap

It stains linen. Sometimes used for marking.

Shrub

Mexicans grow the shrub as a host for the lac insect, which is used in medicine as hepatoprotective and anti obesity drug. Used for erosion control.

Menit tailam

(Kunapatam part-1)

Ingredients

- Kuppaimeniilai 1 part
- Amanakkuenny 4 part

Method of Preparation

Put item 1 into item 2 and boil till the leave are fried to dehydrated and being to float. Take the fried leaves and grind into a fine paste and mix with oil.

Dose: 5-10 ml

Important therapeutic usage

Kutalpuccikal and Pavuttiram

Cirakat Tailam

Plant profile

Cumin is the dried seed of the herb *Cuminum cyminum*, a member of the parsley family. The cumin plant grows to 30–50 cm (0.98–1.6 ft) tall and is harvested by hand. It is an annual herbaceous plant, with a slender, branched stem 20–30 cm tall. The leaves are 5–10 cm long, pinnate or bipinnate, with thread-like leaflets. The flowers are small, white or pink, and borne in umbels. The fruit is a lateral fusiform or ovoid achene 4–5 mm long, containing a single seed. Cumin seeds resemble caraway seeds, being oblong in shape, longitudinally ridged, and yellow-brown in color, like other members of the umbelliferae family such as caraway, parsley and dill. Originally cultivated in Iran and Mediterranean region, cumin is mentioned in the Bible in both the Old Testament (Isaiah 28:27) and the New Testament (Matthew 23:23). The ancient Greeks kept cumin at the dining table in its own container (much as pepper is frequently kept today), and this practice continues in Morocco. Cumin was also used heavily in ancient Roman cuisine. It was introduced to the Americas by Spanish and Portuguese colonists. There are several different types of cumin but the most famous ones are black and green cumin which are both used in Persian cuisine. Today, the plant is mostly grown in China, Uzbekistan, Tajikistan, Iran, Turkey, Morocco, Egypt, Syria, Mexico, Chile, and India. Since cumin is often used as part of birdseed and exported to many countries, the plant can occur as a rare casual in many territories including Britain. Cumin occurs as a rare casual in the British Isles, mainly in Southern

England; but the frequency of its occurrence has declined greatly. According to the Botanical Society of the British Isles' most recent Atlas, only one record has been confirmed since 2000.

Uses

Cumin seeds are used as a spice for their distinctive flavor and aroma. It is globally popular and an essential flavorings in many cuisines, particularly South Asian, Northern African and Latin American cuisines. Cumin can be found in some cheeses, such as Leyden cheese, and in some traditional bread from France. It is commonly used in traditional Brazilian cuisine. Cumin can be an ingredient in chili powder (often Tex-Mex or Mexican-style), and is found in achiote blends, adobos, soffrito, garam masala, curry powder, and bahaarat. Cumin can be used ground or as whole seeds. It helps to add an earthy and warming feeling to food, making it a staple in certain stews and soups, as well as spiced gravies such as chili. It is also used as an ingredient in some pickles and pastries. In India, cumin has been used for millennia as a traditional ingredient of innumerable kormas, masalas, soups and other spiced gravies.

Cirakat tailam

(Taraiyar Taila varkkaccurukkuam)

Ingredients

- Cirakam 35 g
- Nallenney 1.400 lits

Method of Preparation

Mix the ingredients and heat till cirakam is fried and becomes brittle.

Important therapeutic usage

This medicine is to be used as bath oil in case of vanti, talaivali, Mantam and thollunoy. The plant material was cleaned by sorting out using a cloth duster to remove dust and air blowing to remove minute sand particles. Quantitative analysis of the raw material was done for standardization parameters including foreign organic matter, water soluble extractive, methanol soluble extractive total ash and acid soluble ash. Their value are calculated and found to be well within the available standard ranges. The approved raw material was packed in sterilized airtight poly bags with proper labeling and stored in cool place. Tailam is prepared as per the method described in the Siddha formulary.

Analytical study

Analytical phase of the study includes the organoleptic, physicochemical parameters. The physico-chemical parameters were refractive index at 400, weight per ml, saponification value, iodine value, acid value and peroxide value to fix the quality standards of this drug.

Physico chemical parameters of milakait tailam, menit tailam, cirakat tailam

Specific gravity

Specific gravity is the ratio of the density of a substance compared to the density (mass of the same unit volume) of a reference substance. Apparent specific gravity is the ratio of the weight of a volume of the substance to the weight of an equal volume of the reference substance. The reference substance is nearly always water for liquids or air for gases.

Temperature and pressure must be specified for both the sample and the reference. Pressure is nearly always 1 atm equal to 101.325 kPa. Temperatures for both sample and reference vary from industry to industry. In British brewing practice the specific gravity as specified above is multiplied by 1000. Specific gravity is commonly used in industry as a simple means of obtaining information about the concentration of solutions of various materials such as brines, hydrocarbons, sugar solutions (syrups, juices, honeys, brewers wort, must etc.) and acids. Specific gravity of liquid is the Mass of Liquid at given temperature compared with that of Mass of Water¹³.

Refractive index

Refractive index of a substance is defined as the ratio of the velocity of light in air vacuum (or) air to that in the substance.

Weight per ml

The wt/ml of a liquid is the weight in gram of 1 ml of a liquid when in air at 25 °C, unless otherwise specified.

Acid value

The acid value is defined as the number of milligram of potassium hydroxide is required to neutralize the free acid present in 1 g of oil or fat.

$$\text{Acid value} = 5.61 \cdot n/d$$

Where, n = number of 0.1N KOH required
D = weight of gram of substance.

Saponification value

The saponification value is the number which expresses in milligrams the amount of potassium hydroxide necessary to neutralize the free acid and to saponify the ester present in 1 g of fat or oil.

Unsaponification value

It consists of substance present in oils and fats which are not saponifiable by alkali hydroxides and are determined by extraction with an organic solvent of a solution of the saponified substance under examination.

Chromatography

Thin layer silica gel chromatography was carried out in the following solvents.

n butanol: acetic acid : water 75:15:10
n butanol : pyridine : water 50:12.5:37.5

The 3 tailas were separately dissolved in chloroform and spotted. The chromatograms were developed with iodine vapor and sulphuric acid. The sulphuric acid sprayed plates were heated at 110° for 10 minutes in hot air oven.

Table 1: Organoleptic characters of Milagai Taila, Menit Taila, Cirakat Taila

Parameters	Milagai tailam	Menit tailam	Cirakat tailam
Color	Brown	Yellow	Yellow
Odor	Pleasant	Agreeable	Pleasant
Appearance	Opalescence	Opalescence	Translucent
Taste	Bitter	Bitter	Bitter
Touch	Oily	Oily	Oily

Table 2: Physico-chemical parameters of Menit tailam, Milakai tailam and Cirakat tailam

Parameters	Milagai tailam	Menit tailam	Cirakat tailam
Specific gravity	0.9148	0.9172	0.9122
Refractive index	1.4720	1.4556	1.4444
Weight per ml	12	13	13
Acid value	6.625	4.5	5.6
Saponification Value	176	178.7	156.66
Unsaponification Value	1.860	1.44	1.50
Fat content	1.4	1.45	1.55
Iodine number	101	102	101

Table 3: Thin layer chromatography of Menit tailam, Milakai tailam and Cirakat tailam

Tailas	R _f	Iodine vapor	Sulphuric acid
Milagai	0.75	-	Pink
Menita	0.83	Deep violet	Pink
Crikat	0.97	Pink	Pink

RESULTS AND DISCUSSION

Organoleptic Characters

The organoleptic characters of Milagai Taila, Menit Taila, Cirakat Taila were presented in the Table 1. Organoleptic tests are very important because palatability of a drug depends upon these characters.

Chromatography

The thin layer chromatography of 3 tailas showed individual spot which were positive to iodine and sulphuric acid. The R_f value of the spot is 0.75, 0.83 and 0.97 respectively. Milagai taila developed no color with iodine vapor and pink color

with sulphuric acid reagent. Menit taila developed color in both. Cirakat taila developed pink color in both.

CONCLUSION

The milagai tailam, menit tailam, cirakat tailam was studied and described along with physico-chemical parameters in authentication for quality control. Milagai Tailam, Menit Tailam, Cirakat Tailam exhibits a set of diagnostic characters, which will help to identify the drug in the Ayurvedic formulations. The analytical data generated here may be considered as the standard parameters for the formulation.

REFERENCES

1. A Saraswathy, M Girijarani, S Joy and MM Alam. Analytical studies on Mattan Tailam. Drug standardization Research Unit (Siddha) C.S.M.D.R.I.A. (C.C.R.A.S) Arumbakkam, Madras, India; 1999. p. 1-5.
2. Vulava Sreedhar, Nrusingha Prasad Das, Narayan Chandra Dash. Standardization of Durvadhi Tailam: An Ayurvedic Polyherbal Formulation. Indian J of Pharmacy; 2008.
3. Somanathan AR, Sadanadan K and Damodaran NP. Standardisation of Ayurvedic medicines – Dasamulam Kashayam; Ancient Science of Life, IX, No 1989; 2: 54-60.
4. Radha Vakula T, Pathanshetty JK, Venkatram RS, Shankar MR and Koshy Abraham. Chemical Examination of certain Ayurvedic Ghritas and Tailas. Bulletin of Medico– Ethno – Botanical Research 1981; 2: 250–259.
5. Agnivesha. Caraka Samhita. In: Sharma RK, Dash B, editors. Vol.5. Varanasi: Chowkhamba Sanskrit Series Office; 2007. p. 68.
6. Susruta. Susruta Samhita. In: Srikantha Murthy KR, editor. Vol.1. Varanasi: Chaukambha Orientalia; 2004. p. 347 (Su./su./45/112).
7. Sesame oil, Wikipedia, the free encyclopedia.com. <http://www.sesameoil.org>; 2010.
8. Wilson M, Murphy P. Herbal and dietary therapies for primary and secondary dysmenorrhoea. Cochrane Database Syst Rev 2001; 3: CD002124.
9. Vangasena, Vangasena Samhita, Bastikarmaadhikara, Jain Sankarlal Vaidya, editor, Mumbai, Khemnath, Sri Krishnadas Publishers; 1996. p. 952.
10. Chopra RN, Nayar SL and IC Chopra. Glossary of Indian Medicinal Plants, National Institute of Science Communication CSIR New Delhi India; 1956.
11. Kiritikar BR, Basu KD. Indian Medicinal Plants, 2nded; 2007.
12. Yoganarasimhan SN. Medicinal plants of India; 2000.
13. Anonymous. Ayurvedic Pharmacopia of India. Part I, Volume VI, 1sted. Govt. of India, Ministry of AYUSH. Ministry of Health and Family Welfare. New Delhi. Appendix 3; 2009. p. 290.

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