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## Review Article

# Therapeutic Utility of Taila Kalpana as External Application – A Review

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## ABSTRACT

Sneha Kalpana is a fundamental Ayurvedic pharmaceutical process where fats act as carriers of medicinal properties, primarily in the form of taila (oil-based) and ghrita (ghee-based) formulations. Taila preparation involves combining herbal decoctions (kashaya) and pastes (kalka) with oil in precise ratios, preceded by taila murchana to purify and enhance potency. Classical texts describe several preparation methods (paka vidhi), including Agni paka (controlled heating), Aaditya paka (solar exposure), the patana method (using a patana yantra), and the bhavana method (trituration). Each technique ensures proper infusion of therapeutic properties, with unique advantages for preserving volatile compounds, enhancing absorption, or tailoring formulations for specific conditions. Numerous medicated oils are documented for external application in therapies such as abhyanga, pichu, parisheka, and lepa. These formulations address conditions like pidaka, vyanga, vatarakta, kusta, visarpa, and vrana, offering anti-inflammatory, analgesic, and rejuvenating effects. Their lipophilic nature facilitates skin permeation, enabling localized, deep tissue, or systemic actions depending on formulation and application. Prolonged contact time and massage further enhance absorption and circulation, making Taila suitable for chronic disorders, elderly care, and preventive wellness. Modern perspectives highlight parallels between Ayurvedic Taila and topical or transdermal drug delivery systems. Factors such as skin thickness, lipid content, hydration, blood flow, molecular weight, ionization, and partition coefficient influence absorption. Taila's traditional preparation methods align with these principles, reflecting Ayurveda's sophisticated understanding of drug delivery through the skin. Bridging traditional wisdom with modern research and standardization is essential to validate efficacy and integrate Taila into evidence-based healthcare.

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## INTRODUCTION

Sneha Kalpana is an important ayurvedic pharmaceutical process that uses fats as carriers of medicinal properties. It includes two major forms: taila (oil-based) and ghrita (ghee-based) formulations. Taila is prepared by boiling oil with herbal decoctions (Kashaya) and pastes (Kalka) in precise ratios. The process begins with taila murchana, which purifies and strengthens the oil, removes unpleasant odors, eliminates amadosha, and enhances therapeutic potency for effective clinical application<sup>1</sup>. It is a pharmaceutical procedure carried out to produce an oleaginous medicament from plant substances such as Kalka, Kwatha, and Dravadravyas, in specific proportions by subjecting them to a prescribed heating pattern and duration in different lipid media like ghrita & taila (ghee & oil). There are three important components for the preparation of taila. Drava (a liquid that may be one or more, such as kashaya, swarasa, dugdha, mastu, etc.), Kalka (the fine paste of the drug) and taila<sup>2</sup>.

## AIMS AND OBJECTIVES:

- To compile taila's used as external application

- To categorize into different types of paka vidhi

## METHODOLOGY:

Different tailas explained in AFI which are particularly used for external application and its therapeutic utility and skin permeation.

### Different types of paka vidhi:

- Agni paka
- Aadithya paka
- Using patana yantra
- Using bhavana method
- Other unique methods

### Agni paka:

Agni paka is the ayurvedic technique of heating oil with herbal decoctions and pastes under controlled fire until siddhi lakshana—specific signs of completion—are achieved, ensuring proper infusion, purification, and therapeutic potency of the medicated taila formulation.

**Table 1: showing tailas used in bahya prayoga/ abhyangarta**

Yoga	Ingredients	Indication	References
Kimshukadhi taila	Tila taila, chandana, yasti, manjista, laksha etc	Pidaka, vyanga, kanthi hinata	S Y <sup>3</sup>
Khuddaka padmaka taila	Ushira, yasti, haridra, padmaka, chandana etc	Vatarakta, raktadosha, vata vikara.	Cha. Chi <sup>3</sup>
Chuchundari taila	Chuchundari (asian house shrew) mamsa, tila taila and jala	Gandamala, guda brahmsa, garbashaya brahmsa	B R galaganda <sup>3</sup>
Japapatradhi taila	Japa, bilwa, tulasi, narikela jala and its ksheera, yasti etc	Pama, vyanga, vicharchika, shwitra.	Vaidyayogaratnavali <sup>3</sup>
Durvadhi taila	Durva, yasti, amalaki, musta, ushira, chandana, nagakesara, lavanga etc	Shirashula, pinasa, dusta pratishyaya	B H U <sup>3</sup>
Manashiladhi taila	Shila, ballataka, agaru, chandana, nimba taila	Sravayukta vrana, bahuchidrayukta vrana	Gadanigraha <sup>3</sup>
Maharudra guduchi taila	Kashaya of guduchi and nimba, danti, karavira, dadima, jata etc	Vatarakta, kusta, visarpa, vrana vikara	B R vatarakta <sup>3</sup>

Murivenna taila	Narikela taila, shigru, kumari, tambula, palandu, karanja.	Bhagna, sandhisopha, vrana	S Y <sup>3</sup>
Rudra taila	Punarnava, nimba, twak, karanja, patola, danti, kusti, sarala etc	Vatarakta, pama, vicharchika, dadra, visarpa	B R vatarakta <sup>3</sup>
Vidangadi taila	Vidanga, gandaka, manashila, gomutra, sarshapa taila	Yuka, keshaja krimi	Chakradatta <sup>3</sup>
Asana bilwadi taila	Asana, bilwa, amrita, bala, triphala, yasti etc	Shiro-nasa-karna roga	S Y <sup>4</sup>
Kanaka taila	Yasti, manjista, kesara, utpala.	Vyanga, nalika, mukaroga	B R ksudra roga <sup>4</sup>
Kayyonyadi taila	Bringaraja, amalaki, guduchi, yasti, tila.	Shiroruja, palitya, dantaroga	S Y <sup>4</sup>
Karpasasthyadi taila	Karpasa asti, bala, musta, masha, kulatta, rasna, nagara etc	Vataroga, pakshagata, ardita	S Y <sup>4</sup>
Kumkumadi taila	Kumkuma, yasti, chandana, ajaksheera	Varna vikara, vyanga, pidaka, padminikantaka	Y R kshudra roga <sup>4</sup>
Kottamchukkadi taila	Kusta, nagara, vacha, shigru, lashuna etc.	Vatarakta, amavata	S y <sup>4</sup>
Chandanadi taila	Chandana, nakha, yasti, padmaka, ela, jati, bilwa etc.	Raktapitta, kshaya, apasmara, unmada, yakshma	Y R rajayakshma <sup>4</sup>
Jatyadi taila	Jati, nimba, patola, kusta, haridra, katuki etc.	Nadivrana, dagdavrana, sphota, kaccha	Sa.Sa <sup>4</sup>
Jyotismati taila	Apamarga kshara jala, jyotismati and tila taila	Shwitra kusta	Y R kusta <sup>4</sup>
Tunga drumadi taila	Narikela jala, vacha, ushira, yasti, utpala etc.	Shiroabhyanaga in unmada, anidra, nayanaroga	S Y <sup>4</sup>
Dhanwantara taila	Bala, yava, kola, kulatta, dashamula, manjista, sariva etc.	Gulma, dathukshaya, bala roga, sutika roga, vataroga	S Y / AH / VYR <sup>4</sup>
Nalpamaradi taila	Nyagrodha, udumbara, ashwatta, kusta etc.	Visarpa, kusta, pama, kandu, pitika	S Y <sup>4</sup>
Parinatakerikskeeradi taila	Narikela ksheera, jambira, sarja, tilataila.	Avabahuka	S Y <sup>4</sup>
Prabhanjana vimardana taila	Bala, shigru, arka, satavari, eranda, patala etc.	Vataja gulma, arditha, moodagarbha	S Y <sup>4</sup>
Balaguduchyadhi taila	Bala, guduchi, tilataila etc.	Vatarakta, raktagata vata	S Y <sup>4</sup>
Balahatadi taila	Bala, amalaki, guduchi, masha, raktachandana, yasti etc.	Shiroruja, ardhavabhedaka	S Y <sup>4</sup>
Bruhat saindhavadi taila	Saindhava, rasna, maricha, kushta, shunti, eranda, etc.	Ardita, hritshoola, parshwashoola, sandhigata vata	S Y <sup>4</sup>
Manjistadi taila	Manjishta, daruharidra, musta, sariva, katuki, triphala, yasti, etc.	Netra ruja, shiroruja	S Y <sup>4</sup>
Nirgundi / langali taila	Nirgundi swarasa, tila, langali	Gandamala	Sar sam <sup>4</sup>
Vajraka taila	Saptaparni, karaveera, arka, nimba, chakramarda, triphala, trikatu.	Twak dosha, kushta, dushta nadivrana	A H chi 19 <sup>4</sup>

Vishatinduka taila	Vishamushti, shigru, dhatura, danti, snuhi, lashuna, etc.	Vata vyadhi, vatarakta, kushta, vaivarnya	B R vatarakta <sup>4</sup>
Somaraji taila	Bakuchi, haridra dwaya, sarshapa, kushta, aragwadha, karanja, sarshapa taila, chakramarda etc.	Dushtavrana, nadvirana, dadru, paama kushta, kandu, pidika	B R kushta <sup>4</sup>
Sahacharadi taila	Sahachara, dashamoola, shatavari, ushira, kushta, ela, priyangu, tagara, etc.	Vatavyadhi, kampa, gulma, pinasa, urustambha	A H chi 21 <sup>4</sup>
Bruhat marichyadi taila	Maricha, danti, trivrut, haridra, haratala, shilajatu, shataparni, karaveera.	Kushta, vrana, vatarakta, vicharchika, pama	Y R vatarakta <sup>5</sup>
Vayucchayadi surendra taila	Dashamula, ela, kusta, manjista, vacha, punarnava.	Vatavikara, hikka, kampa, shwasa, kasa, unmada, apasmara	Ayurveda sara sangraha <sup>5</sup>

**Table 2: showing tailas used in shalaky conditions.**

Yoga	Ingredients	Indication	References
Kumbhi taila	Jalakumbhi swarasa, and it kwatha with tila taila	Karnapoorana in shula, karnapaka and karnapuya	S Y <sup>3</sup>
Nasaarsha hara / grahadhumadi taila	Grahadhuma, daru, yavakshara, pippali, apamarga etc.	Nasa arsha and kunakha	Y R nasaroga <sup>3</sup>
Bilwa taila	Bilwa, gomutra, aja ksheera, tila taila.	Karnapoorana in bhadirya	B R karnaroga <sup>3</sup>
Shambuka taila	Sarshapa taila, shambuka mamsa and jala.	Karnagata nadvirana	B R karnaroga <sup>5</sup>

**Table 3: showing tailas used for Ano-rectal conditions:**

Yoga	Ingredients	Indication	References
Kasisadi taila	Kasisa, pippalli, kusta, langali, shilajatu, tala, shila, gomutra etc.	Arsha	B R arsharoga <sup>4</sup>
Chitrakadi taila	Chitraka, trivrut, arka, vacha, langali, saptaparni etc.	Bhagandara	S chi 8 <sup>4</sup>
Mushikadi taila	Mushika mamsa, panchamula, ksheera, tagara.	Pichu in guda bramsha, yoni bramsha	B R kshudra roga <sup>5</sup>

### Aadithya paka:

Aadithyapaka, also called surya paka, is an ayurvedic method of preparing medicated oils by exposing them to sunlight instead of fire. The mild

solar heat gradually processes the ingredients, preserving volatile and heat-sensitive compounds, ensuring purification, potency, and therapeutic effectiveness of the formulation.

**Table 4: showing tailas prepared using surya paka**

Yoga	Ingredients	Indication	References
Pruthvisara taila	Chitraka, visha, karavira, nirgundi, nadibija, karanja taila and kanji.	Kusta and vrana	Chakradatta <sup>7</sup>
Manjishtadya Surya paka taila	Sarshapa taila, manjishta, triphala, laksha, nisha, manashila, Haratala, gandhaka churna	Pama	Gadanigraha <sup>6</sup>
Vrana rakshasa taila	Parada, gandhaka, haratala, sindhoora, manashila, lashuna, visha, etc.	Daha, vicharchika, nadi vrana, kushta, mandala vrana	B R vranashotha <sup>4</sup>

Gugguladya Surya paka taila	Sarshapa taila, guggulu, maricha, vidanga, sarshapa, kasisa, musta, sarjarasa, haratala, gandhaka, manashila, kampilaka, haridra, daruharidra	Kusta	Gadanigraha <sup>8</sup>
Vachadi surya Paka taila	Tila taila, vacha, bala mula	Sakalamaya hara in Shishu pushtikara-Abhyanga	Bharata Bhaishajya Ratnakara <sup>9</sup>
Marichyadi Taila	Sneha-tila taila Kalka-maricha, kushta, tamalapatra, manashila, kasisa	Sidma when applied For 1 week Kilasa-for 1month	Bharata Bhaishajya Ratnakara <sup>10</sup>

**Patana method:**

The patana method involves preparing formulations using a patana yantra, where substances are subjected to controlled heating for

a specific duration. This process ensures uniform transformation, enhancing therapeutic efficacy while maintaining classical ayurvedic pharmaceutical principles.

**Table 5: showing taila's prepared using patana yantra**

Yoga	Ingredients	Indication	References
Gandhaka taila	Palasha beeja, aja ksheera, gandaka, goghrita and godugdha.	Sarva kusta, kandu, shwitra	R T <sup>811</sup>
Visarpahara taila	Eranda beeja, katutumbi beeja, bakuchi etc	Visarpa	R R S <sup>12</sup>
Eranda beejadi taila	Eranda beeja, chakramarda beeja, nimba phala majja, bakuchi beeja	Visarpa	R R S <sup>13</sup>

**Bhavana Method:**

The bhavana method for taila preparation involves mixing finely powdered (sukshma churna) ingredients with a specific oil. Through repeated

trituration, the medicinal properties integrate into the oil, enhancing potency, absorption, and therapeutic effectiveness in ayurvedic formulations.

**Table 6: showing taila by bhavana method**

Yoga	Ingredients	Indication	References
Sarvakustantaka taila	Parada, gandaka, abrika bhasma, tuttha bhasma, nimba taila, karpasa taila and jyotishmati taila.	Add all the ingredients, do bhavana by adding tailas mentioned above. Indicated in sarvakusta	R. R. S <sup>2014</sup>

**Unique method of preparation:**

Yoga	Ingredients	Method of preparation	Indication	References
Gandaka taila 1	Gandaka churna, milk.	Gandaka churna is poured into the boiling milk, do manthana and extract butter and get taila	Kshudra kusta	R. T <sup>815</sup>
Gandaka taila 2	Gandaka churna, snuhi ksheera and arka ksheera.	Apply the butter extracted above to vastra with both the ksheera and extract the taila as that of Druti Kalpana.	Kshudra kusta And twak vikara	R. T <sup>816</sup>
Kustavidravana taila	Parada, gandaka, loha bhasma, bakuchi beeja and tila taila.	Same as that of agni paka then after keeping it in the heap of yava for 1 month.	Shwitra and sarva kusta.	R. R. S <sup>2017</sup>



## **Drug delivery system through skin<sup>18</sup>:**

Topical and transdermal pharmaceutical products are designed for external application on the skin, with actions varying by depth of penetration. Some act locally on the surface layer, such as keratinolytic agents like salicylic acid. Others penetrate deeper into the dermis or subcutaneous tissue, exemplified by anti-inflammatory gels like diclofenac. Certain formulations achieve systemic absorption, where drugs enter the bloodstream through the skin, as seen in transdermal patches delivering nicotine. This layered approach allows targeted therapy ranging from local to systemic effects.

Transdermal permeation is the process by which a drug applied on the skin surface, usually through a patch or gel, passes through the stratum corneum and moves across deeper layers like the epidermis and dermis. Eventually, it enters capillaries to reach systemic circulation, producing a systemic therapeutic effect.

This permeation occurs through three main pathways. The paracellular route allows small, uncharged molecules to pass between cells. The appendageal route utilizes hair follicles and glands, suitable for larger molecules and ions. The transcellular route involves movement directly through cells, requiring both lipid and water solubility for effective passage.

## **Factors affecting skin absorption<sup>19</sup>:**

**1. Physiological factors:** drug absorption through the skin is influenced by several physiological and environmental factors. Increased skin thickness decreases absorption since thicker layers act as stronger barriers, while higher lipid content enhances permeability for lipophilic drugs. Greater sweat gland density and hydration improve diffusion, and changes in pH can variably

affect absorption depending on the drug's ionization state. Additionally, increased blood flow promotes systemic uptake, while skin diseases such as dermatitis may either disrupt the barrier or heighten absorption due to inflammation. Elevated temperature further enhances diffusion and circulation, collectively shaping the effectiveness of transdermal and topical drug delivery.

**2. Physicochemical factors:** drug absorption through the skin is strongly influenced by physicochemical properties of the drug and formulation. Larger molecules with molecular weight above 400 Daltons penetrate less easily, while a higher partition coefficient improves lipid solubility and enhances permeation. Ionized drugs cross membranes less efficiently but longer contact time with the skin increases absorption.

Other factors include the drug affinity to its vehicle—strong binding reduces release to the skin—and particle size, where smaller particles penetrate more effectively. Together, these parameters determine the efficiency of topical and transdermal drug delivery systems.

## **DISCUSSION:**

Taila is a highly adaptable ayurvedic dosage form, widely used in therapies such as abhyanga, pichu, parisheka, and lepa. Its lipophilic nature allows it to permeate the skin effectively, producing both localized and systemic effects. Depending on the formulation and method of application, it can act on different layers of the skin, offering anti-inflammatory, analgesic, and rejuvenating benefits. Prolonged contact time, especially when combined with massage, enhances absorption, circulation, and overall therapeutic efficacy, making taila gentle and suitable for chronic conditions, elderly care, and preventive wellness.



Classical ayurvedic texts describe numerous taila formulations for external use in various diseases, highlighting its therapeutic versatility. The preparation method, known as paka vidhi, plays a crucial role in determining the route of administration—whether external, internal, or nasal—and ensuring suitability for specific conditions. The type of paka depends on the intended use and desired depth of action, reflecting ayurveda's precision in formulation design.

While traditional wisdom provides a rich foundation, modern science emphasizes the importance of standardization and clinical validation to establish efficacy across diverse clinical contexts. Bridging this gap through research strengthens the credibility of ayurvedic practices and integrates them into evidence-based healthcare. Taila thus represents a unique synergy of traditional knowledge and modern pharmacological potential, offering therapeutic versatility and cultural resonance in holistic medicine.

## CONCLUSION:

Many formulations described in the Ayurvedic Formulary of India (AFI) for exclusive external application remain underutilized in the contemporary healthcare market due to limited availability, lack of standardized protocols, and insufficient clinical validation. To ensure their wider acceptance and therapeutic credibility, these preparations demand rigorous pharmaceutical standardization, analytical validation, and well-designed clinical studies that can generate reproducible evidence. Modern scientific exploration is particularly necessary to establish how traditional dosage forms such as taila offer unique benefits in external applications, including enhanced penetration, sustained therapeutic action, and compatibility with diverse skin conditions. Bridging classical wisdom with

modern research methodologies will not only strengthen the evidence base but also facilitate integration of these formulations into mainstream practice. Thus, systematic validation and evidence-based documentation are essential to unlock the full potential of AFI-listed external formulations and reaffirm the relevance of taila in contemporary therapeutics.

## REFERENCES

1. Kadibagil VK, Sukumar BS. Textbook of Rasashastra evam Bhaishajya Kalpana. 1st ed. Varanasi: Chaukhambha Publication; 2024. Vol. 1. Chapter Kalpana Nirmana. P.133
2. Kadibagil VK, Sukumar BS. Textbook of Rasashastra evam Bhaishajya Kalpana. 1st ed. Varanasi: Chaukhambha Publication; 2024. Vol. 1. Chapter Kalpana Nirmana. P.131
3. Government of India, Ministry of Health and Family Welfare, Department of Indian Systems of Medicine & Homoeopathy. The Ayurvedic Formulary of India. Part III. New Delhi: Controller of Publications; 2003.
4. Government of India, Ministry of Health and Family Welfare, Department of Indian Systems of Medicine & Homoeopathy. The Ayurvedic Formulary of India. Part I. New Delhi: Controller of Publications; 2003.
5. Government of India, Ministry of Health and Family Welfare, Department of Indian Systems of Medicine & Homoeopathy. The Ayurvedic Formulary of India. Part II. New Delhi: Controller of Publications; 2003.
6. PV Sharma, chakradutta (Sanskrit text with english translation) 2007 edition. Chaukhambha Orientalia, Varanasi ch-50/157. P-408.
7. Pagad, A., Mishra, A. K., & Hussain, G. (2023). Comparative analytical evaluation of Pruthvisara taila prepared by two different methods. *International Journal of Ayurvedic*



- Medicine, 14(3), 789–793. <https://doi.org/10.47552/ijam.v14i3.3856>.
8. Shah CN.Bharath Bhaishajya Ratnakara.Reprint ed.New Delhi.B.Jain publishers ltd; 1999. Vol. 2, P. 60.
  9. Shah CN.Bharath Bhaishajya Ratnakara.Reprint ed.New Delhi.B.Jain publishers ltd; 1999. Vol. 4, P.683.
  10. Shah CN.Bharath Bhaishajya Ratnakara.Reprint ed.New Delhi.B.Jain publishers ltd; 1999. Vol. 4, P.97.
  11. Sachin S. Sheth, Gangaprasad R. Asore, Pooja A. Tambe. Preparation of Gandhak Taila by Patalyantra method and Pharmaceutico-analytical Study of Gandhak Taila cream. *J Ayurveda Integr Med Sci* 2022; 3:41-46. <http://dx.doi.org/10.21760/jaims.7.3.6>.
  12. Gangaprasad R. Asore, Sachin S. Sheth, Prajakta D. Pansare, Preparation of Visarpahar Taila by Patalyantra Method and Pharmaceutico-Analytical Study of Visarpahar Taila Cream. *J Ayu Int Med. Sci.* 2022;7(2):22-27.
  13. Jayashree Ranjani, Reshma M Saokar and Sujatha K. Pharmaceutical study of Eranda Taila extracted from Eranda Beeja with and without shodhana. *Int. J. Res. Ayurveda Pharm.* 2024;15(4):65-69 DOI: <http://dx.doi.org/10.7897/2277-4343.154119>.
  14. Vagbhata A. *Rasa Ratna Sammucchaya*. Hindi translation by Mishra S. Varanasi: Chaukhambha Orientalia; 2021. Chapter 20, Shloka 180. p.488
  15. Sharma S, Shastri K. *Rasa Tarangini*. Varanasi: Motilal Banarasidas; 2012 edition. Chapter 8, Astama Taranga, Shloka, 96-98. P.192.
  16. Sharma S, Shastri K. *Rasa Tarangini*. Varanasi: Motilal Banarasidas; 2012 edition. Chapter 8, Astama Taranga, Shloka, 94–95. P.191.
  17. Vagbhata A. *Rasa Ratna Sammucchaya*. Hindi translation by Mishra S. Varanasi: Chaukhambha Orientalia; 2021. Chapter 20, Shloka 181–182. P.488.
  18. Andrea Crasta, Tanvi Painginkar, Amatha Sreedevi, Sachin Datram Pawar, Muddukrishna Badamane Sathyanarayana, S.G. Vasantharaju, Riyaz Ali M. Osmani, Gundawar Ravi, *Transdermal drug delivery system: A comprehensive review of innovative strategies, applications, and regulatory perspectives*, *Open Nano*, Volume 24, 2025, 100245, ISSN 2352-9520, <https://doi.org/10.1016/j.onano.2025.100245>.
  19. Vaseem RS, D'cruz A, Shetty S, - H, Vardhan A, R SS, Marques SM, Kumar L, Verma R. *Transdermal Drug Delivery Systems: A Focused Review of the Physical Methods of Permeation Enhancement*. *Adv Pharm Bull.* 2024 Mar;14(1):67-85. doi: 10.34172/apb.2024.018. Epub 2023 Oct 14. PMID: 38585458; PMCID: PMC10997930.

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