



## ADITYAPAKA (Heating by Sun rays) A METHOD OF SNEHA KALPANA - A REVIEW

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### ABSTRACT

*Bhaishajya Kalpana* is a branch of Ayurveda which deals mainly with *Aushadha nirmana*, by using the tools like *Samyoga*, *Vishlesha*, *Kala*, *Samskara* and *Yukti*. *Sneha Kalpana* is one such *aushadha kalpanas* which contains water and lipid soluble active principles. *Adityapaka* (heating through Sunrays/solar radiation/solar resource) is a type of *sneha kalpana* where *taila* or *ghrita* is processed on mild temperature produced by the exposure to sunlight for a specific time period at times in specific vessels (iron, copper, steel etc). This method is practiced to prepare *taila* or *ghrita paka* from the drugs that possibly are having volatile property and are heat sensitive in nature. Very minimum references regarding such procedure of *Aditya paka* are available that too scattered in classics. This is an attempt to collect information on such formulations by reviewing classical texts and various databases through various search engines like Google scholar, Pubmed etc. Total 29 references of *Aditya paka* found in different texts of Ayurveda. These formulations are routinely prescribed for topical application.

**KEYWORDS :** Ayurveda, *Ghrta*, *Taila*, *Sneha Kalpana*, *Adityapaka*.

### INTRODUCTION

The word "*Sneha Kalpana*" consists of two words '*Sneha*' and '*Kalpna*', where *Sneha* means fats or oliginous materials and *Kalpna* stands for pharmaceutical process. *Sneha Kalpana* may be defined as a pharmaceutical process to prepare oleaginous medicaments in presence of substances like *Kwatha*, *Kalka*, and other *drava dravyas* in specific proportions. They are subjected to a unique heating pattern for specific duration to obtain specific characteristic features. This process ensures extraction of the active therapeutic principles of the ingredients used.<sup>1</sup> By this unique process of heating, few active ingredients of drugs are transferred into the solvent material, which can be basically water soluble, lipid soluble. when a liquid media is other than water like *ksharodaka*, *kanji* or *gomutra*, the nature of extracts entering into the finished products may differ. The general ratio of *Kalka*, *Sneha* and *Drava dravya* is 1:4:16 for *Sneha* preparation.<sup>2</sup> In other words *Sneha Kalpana* is a process where the various forms like decoction, paste, milk and perfuming substances are subjected for the preparation of oleaginous medicaments (Oil and ghee). It is an *Upkalpana* of both *Kashaya Kalpana* and *Kalka kalpana*.<sup>3</sup> *Sneha kalpana* among different dosage forms in ayurveda introduced to get better therapeutic efficacy, potency and shelf life. This can be used conveniently both internally as well as externally as per the requirement. *Sneha paka* is used to extract the fat-soluble active principles from drugs to the solvent. Through *snehapaka* process transformation of the therapeutic properties of the ingredients to the solvent is done, and it also helps in absorption of drugs through skin and their shelf life period is also increased for longer duration.

There are approx. 53 different *sneha kalpas* (ex. : *churna* with *ghrita* etc.) and *yogas* (ex.: *panchgavya ghrita* etc.) are mentioned in *Charaka Samhita* with their uses in different diseases and in different *kalpa* forms.<sup>4</sup>

### METHODOLOGY :

Various databases like pubmed, scopus and records of various previous work have been searched through various search engines like google scholar, scihub. Various classical texts (like *Charaka*, *Sushrut*, *Vagbhatta*, *Sharangdhara*, *Bhaishajya Kalpana*, *Yogratnakara*, *Bhavaprakash*) and their

commentaries (like *Gudarth Dipika* on *Sharangdhar Samhita*, *Sidhiprada* Hindi commentary on *Rasa ratna samucchaya* etc.) were searched chapter wise to collect data on this.

### Method of Preparation of *Sneha kalpana*:

there are two different methods for *sneha paka* mentioned in classical texts.

- *Agni Paka* : method of *sneha paka* by using fire (Direct heating)
- *Aditya Paka* / *Surya paka* / *Bhanu paka* (with sun rays): method of *sneha paka* by using sunlight (Indirect heating)

### *Agni paka*<sup>5</sup>

This is the most common method followed for *sneha* preparations. In this *paka* method, the *paka* is done using fire as a heat source. Usually all the *sneha* preparations are manufactured by using *Agni* which includes *Amapaka*, *Mridupaka*, *Madhyampaka*, *Kharpaka*, *Dagdhapaka*, *Patra paka*.<sup>6</sup> In this, the *Sidhi lakshanas* (test of perfectness) are obtained as the *sneha* is getting prepared, like *phenshanti* (Disappearance of foam in *Ghrta paka*), *phenotapatti* (appearance of foam in *Taila paka*), *madhyoda arvivimuchayate* (*kalka* doesn't adhere to ladle), *Shabdhino agni nishiptihaha* (Absence of sound on fire), *vartivata kalkastu syata angulya vimardita* (*kalka* attains wick shape when rolled between thumb and index fingers), *gandhavarna rasotapatti* (Emergence of desired odor, color and taste).

### *Suryapaka*(*AdityaPaka*)<sup>7</sup>

The *paka* is done by using sun rays or heat generated by it. The *sneha* along with *kalka dravyas* are kept in the sun rays for certain duration of time. Sometimes *drava dravyas* may also be added along with *kalka dravyas*. Example- *Pruthvi sara taila*. No specific *siddhi lakshanas* are mentioned in classics, but some description is available for the use of particular *patra*'s (vessel) and change in colour of *patra* after proper *paka*. Example-*Vranarakshas taila* in *Bhaishajya Ratnavali* and *Adityapakva ghrita* in *Bhaishajya ratnavali*, *Kasisadya ghrita* in *Sharangdhara samhita*. Most of the formulations contain herbo-mineral *dravyas* in this method of *paka*. *Sneha* preparations, which are used for skin disorders are prepared by this method as this *sneha* absorbs UV rays

from sun and it is found that UVB rays are more effective in treatment of skin disorders because they penetrate more and helps for rapid skin shedding and growth. It helps to reduce the inflammation of skin. Example– in psoriasis<sup>9</sup>

OBSERVATIONS:

It is found that there is no description of any formulation or its method using sun rays in *Brihatrayi* but many other classical texts have some description on *aditya paka* method like *Chakradutta*, *Bhaishajya Ratnavali*, *Vangasena*, *Bharata Bhashajya Ratnakara*/ Although few references of *chandraputa* and *suryaputa* (example *Sannipata suryarasa* in *RRS*). also found in classical texts where utility of sunlight in formation of formulation or other processes like *shodhana (lauha Shodhana)*, *bhavana (amalaki rasayana)*, preparation of *rasaushadhis* in *khalva yantra* in sunlight are found, or in therapeutics like exposure of patient to sunlight after application of medicine or in *panchkarama snehana*, *swedana* etc.

Following table is an attempt to compile the few *Adityapaki sneha* yoga mentioned in different classical texts like *Chakradatta*, *Sharangadhara*, *Rasa Ratna Samucchaya* *Bhaishajya ratnavali*, *Bharata bhaishajya ratnakara*, *Gada nigraha*, *Vangasena*, *Sahasrayoga*, etc.

Table no.1.1: Showing Indications of Adityapaki yoga mentioned in different classical texts

S. no.	Book/ Indications/ Yoga	CD	BBR	GDN	BR	VS	VMV	VB	RRS	SS
1.	Aditya pakaguduchi taila (APGT)	KeR			KeR					
2.	Manjishtadya surya paka taila (MSPT)		PK	PK	PK					
3.	Gugguladya surya paka taila (GSPT)		KR	KR						
4.	Vachadi Surya paka taila (VSPT)		BR							
5.	Marichyadi Taila (MT)		SK		KR					

Table no.1.0 : Showing Adityapaki Sneha Yoga with their ingredients, proportion and duration mentioned in ayurvedic classics

Yoga /	AP	MS	GS	VS	M	KR	K	PS	AP	A	A	VR	M	M	R	VA	S	HT	ST	V	VS	K	DS	C	SV	AP	AP	KG
Ingredients	GT	PT	PT	PT	T	T	P	T	kT	P	P	T	T	T	T	T	S			A	PT	V	PT	T	G	G	G	
							T			T <td>T</td> <td></td> <td>I</td> <td></td> <td></td> <td></td> <td>P<td></td><td></td><td>T</td><td></td><td>T</td><td></td><td></td><td></td><td></td><td></td><td></td></td>	T		I				P <td></td> <td></td> <td>T</td> <td></td> <td>T</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>			T		T						
HERBAL																												
Vatavrohaka	+											+								+								
Vataankura																5T												
Bhutakeshi	+																											
Manjishta		+								+																		+
Triphala		+							+	+					+													
Triushana															+													
Hingu															+													
Guda															+													
Dadhimastu															+													
Pipparmoola															+													
Ajmoda															+													
Saur.Javana															+											+	+	
Vidanga															+								+					+
Chitraka															+													
Sukhamala															+													
Masha															+													
Shrivatsa																									5T			

GJRA - GLOBAL JOURNAL FOR RESEARCH ANALYSIS ✧ 185

Jiraka							+													
Chandana							+													
Nishotha							+													
Musali							+													
Madhuka							+													+
Jayanti							+													
Kamalnataka							+													
Panchlavana							+										+			
Saindhavavani																			+	
Ashvagandha					1K		+													
Jatamansi								+			5T			+						+
Vatnabha					1P				1K					+		1T				
Yavashara												+					+			
Shw chandan												+								+
Darvi																	+			
Kasmarda																	+			
Gandira																	+			
Yasani																		5T		
Rasanjana																				+
MINERAL																				
Manashila		+	+		1K			+	1K	+	2T		+	2S					5T	+
Haratala		+	+		1K			+	1K				+	2S						+
Gandhaka		+	+		1K			+	1K				+		1K				5T	+

[illegible]

6.	Kushta Rakshasa taila (KRT)		Kr19	PK	UB,MV, KR BD,VR, PK, VK				
7.	Kutaja patra Taila (KPT)					KR			
8.	Pruthvi sara Taila (PST)	KR, Vr, RV			KR				
9.	Aditya pakva Taila (APkT)	PK			KhR		PK		
10.	Aditya paka Taila (APT)	PK			PK		PK		
11.	Aditya paka Taila (APT)	IL							
12.	Vranaraks has taila (VRT)		KR	KR	KR,NV, VP,MV, VK, DK, Ka,DVr		NV		
13.	Marichay adi taila (MT1)							K R	
14.	Marichay dya taila (MT)	KR	KR	KR	PK		PK		
15.	Rasoadaya Taila (RT)	AV	AV						
16.	Vatavaroh adi taila (VAT)		KsR						
17.	Sindurady asuryapaka tailam (SSPT)		PK,VK, DK, KKK,K R	PK,V K, DK, KK, KR	KK				
18.	Haridradi tailam (HT)		PK, VK, DK,KR						
19.	Snuhadya taila (ST)		KKR,K V	KR	KR			K V, KR	
20.	Vatavaroh iadi taila (VAT)		IL						

21.	Vachadi suryapa ka taila (VSPT)		BR					
22.	Kustha Vishada nam tailam (KVT)	KR	PK, AP, VyR	SK, VK, DV, BD	KR,S K			
23.	Darviad ya suryapa ka tailam (DSPT)		Ka.K R	PK, VK, DK, DB				
24.	Chitraka di tailam (CT)	KR, Vr, RD		Vr, RD				
25.	Gandha kpshti Taila (GPT)		KR	KR	KR		PK KR	
26.	Srivasak a ghruta (SVG)				KC			
27.	Adityapa kva Ghruta (APG)	Ku. R		Ku.R				
28.	Adityapa kva Ghruta (APG)			Ku.R				
29.	Kasisad hya Ghrutam (KG)			Vr, RD,K R				KR, VK, VS, SD, SS,VR

KeR- Kesharopanam

PK- Pama Kustha  
KR -Kushta roga  
BR-Bala roga  
SK- Sidhma Kustha  
UB-Udumbara  
MV-Mamsavrudhi  
KC- Kacchu  
BD-Bhagandara  
VR- Vatarakta  
PK-Pama kustha  
VK- vicharchika kustha  
KR -Kustha roga  
Vr - Vrana  
RV-Raktavikruti  
KhR Khalitvadi roga



IL- Indralupta  
 NV- nadi vrana,  
 VP-Visphota  
 DK- dadru kushtha  
 Ka -kandu  
 AV -aamvata  
 KsR-Kshudraroga  
 KKK-Kitibha kapal kusta  
 KKR—Kitibha kushtha roga  
 KV -kupita vata  
 AP-apachee  
 VyR- vyang roga  
 SK - Sidhma kushtha  
 DV- Dushta vrana  
 DB- durbhaktam  
 RD- raktsadosha  
 Ku.R- Kuranda  
 VS -Visarpa  
 SD- Shukadosha  
 SS- Shirasphota  
 VR- Vatarakta

**Table no.1.2: Showing Name of Taila Yoga with Indications and References**

Sl.No.	Name of Taila Yoga	Indications	References
1.	Aditya paka guduchi taila	Kesha ropanam	Chakradatta <sup>10</sup>
2.	Manjishtadya surya paka taila	Pama, Kustha	BBR <sup>11</sup>
3.	Gugguladya surya paka taila	Kushta	BBR <sup>14</sup>
4.	Vachadi Surya paka taila	Balaroga	Gadanig. <sup>12</sup> BBR <sup>13</sup>
5.	Marichyadi Taila	Sidhma kushtha	BBR <sup>15</sup>
6.	Kushta Rakshasa taila	Udumbara, Kacchu, Mamsa vrudhi, Bhagandara, Pama, Vatarakta, vicharchika	BR <sup>16</sup>
7.	Kutaja patra Taila	Kushta	Vangasena <sup>17</sup>
8.	Pruthvi sara Taila	Kushta, Vrana, Raktavikruti	Chakradatta <sup>18</sup> R <sup>19</sup>
9.	Aditya pakva Taila	Khalitadi roga	BR <sup>20</sup>
10.	Aditya paka Taila	Pama	BR21 Ch 22Vr <sup>23</sup>
11.	Aditya paka Taila	Indralupta	Chakradatta <sup>24</sup>
12.	Vranarakshas taila	Kustha, nadivra, visphot, mansvridhi, vicharchika, dadru, kandu, dusta vrans etc	BR <sup>25</sup>
13.	Marichyadi taila l	Kustha	Vaghatta <sup>26</sup>
14.	Marichaydia taila	Pama, kustha	Vr. <sup>27</sup> BR <sup>28</sup>
15.	Rasoadaya Taila	Aamvata	
16.	Vatavaroahadi taila	Kshudrarogad hadhikar	BBR <sup>29</sup>
17.	Sinduradya suryapaka tailam	Pama, vicharchika, dada, kushtha, kitibhakapal kushtha, etc.	Gad. <sup>30</sup> . BBR <sup>31</sup>
18.	Haridradi tailam	Pama, vicharchika, kustha	BBR <sup>32</sup>
19.	Snuhadya taila (Kitmari taila)	Kitibha, kustha, kupita vata	R.R.S. <sup>33</sup> BBR <sup>34</sup>

20.	Vatavaroahadi taila	Idralupta	BBR <sup>35</sup>
21.	Vachadi suryapaka taila	Balaroga	BBR <sup>36</sup>
22.	Kustha Vishadanam tailam	Sidhma, pama, vicharchika, apache, vyang, dusthavrana	Gad. <sup>37</sup> BBR <sup>38</sup>
23.	Darviadya suryapaka tailam	Kandu, pama, vicharchika, dadru	Gad <sup>39</sup> BBR <sup>40</sup>
24.	Chitrakadi tailam	Kustha, vrana, raktadosha	Chakradatta <sup>41</sup>
25.	Gandhakpishti Taila	Pama, Kustha	RRS <sup>42</sup>
26.	Srivasaka ghrita	Kachu roga	Vangsen <sup>43</sup>
27.	Adityapakva Ghrita	Kuranda	Chakradatta <sup>44</sup> BR <sup>45</sup>
28.	Adityapakva Ghrita	Kuranda	Br <sup>46</sup>
29.	Kasisadhya Ghritam	Dadru, Pama, Shirasphota, visarpa, shukadosha, Vatarakta	Sharangadhara Samhita <sup>47</sup>

**Table no.1.3: Showing Types of Sneha Paka**

	Agnipaka	Aditya paka
Source of heat	Agni	Sunrays
Drava dravaya	Usually added	May be added, usually done by kalka dravaya
Paka lakshana	Observed Phenshanti (in Ghrita paka), phenotapatti (in Taila paka), madhyodaarvivimuchayate Shabdhino agni nishiptihaha vartivata kalkastu syata angulya vimardita gandhavama rasotapatti	No such lakshana mentioned Change in colour of patra is found Change in consistency of media noticed
Paka kal/duration of paka	Depend on ingredients and on drava dravaya	Till complete moisture get evaporated (as mentioned in classics)
Uses	Internally or externally	For external use mainly
Types of drugs used	All types	Usually volatile drugs are used

These are the different methods of Sneha paka i.e. agnipaka and Aditya paka as mentioned in above table.

**Advantages of Aditya paka:** Only kalka and sneha is used in maximum number of formulations, as the kalka dravyas absorbed more sneha and their active ingredients comes out directly into sneha after giving mild temperature through sunrays. Although, this method of sneha paka saves time, manpower and financial burden but, it is not possible in all geographical areas.

**Drawbacks of Aditya paka:** Sneha paka preparations cannot be prepare at high altitude areas geographically and in such areas with more seasonal changes. For this, as alternative method also explained by some Acharyas<sup>48</sup> in their Commentaries of classical texts, where they mentioned about the additional alternate concept of paka, where the aadityapaka is not possible to do. For example: Acharya Vidhyasagar pandit parshuram shastri in his Sanskrit commentary "gunarth dipika" of Sharangadhara Samhita mentioned the alternative method for preparation of Kasisadya ghrita by agnipaki method.<sup>49</sup>

**DISCUSSION:**

Sneha is a pharmaceutical preparation through which water soluble and fat soluble active principles can be extracted from herbs. Its various uses are mentioned in ayurveda and in about 80% Panchakarma procedures snehapaka have been done, especially for basti, vaman, virechana etc. As sneha is also used in the form of kalka or decoction preparation of various types of basti, so sneha plays a major role in ayurvedic therapeutics.

Acharya Charaka also mentioned usefulness of sneha prayoga in basti mainly for vatavyadhis, also stated the usefulness of sneha prayoga followed by sunlight exposure in (therapeutics) panchakarma procedure and also the use of sunlight rays exposure in treatment of some skin diseases like shwitra etc. He also mentioned that ghrita is best for Kustha (Skin disease).

Sneha paka can be done by Agni paka or Aditya paka methods and by various methods of sneha paka the active components comes into sneha. Aditya paka sneha is widely indicated in skin disorders. During Aditya paka, sneha absorbs the ultra violet rays which facilitates the penetrating property of Sneha. As UV rays helps for rapid shedding and growth of skin it can be applied on wounds for quick healing. Few studies proves that application of adityapaki Kutaja patra taila cures Kitiba Kushta, Vicharchika. It is found that many of the drugs containing fat soluble volatile ingredients which also facilitates Adityapaka method to protect their therapeutic indices at lower temperature (ex.khadir, sweta chandan, ajmoda etc.)

Sneha is a best media which can pass easily through the lipid membrane present in the skin. In ayurveda, these Sneha kalps (oleaginous formulation) can be correlated with lipoidal drugs. Liposomal encapsulation showed more drug retention compared with plain drug gel and plain drug cream. The higher drug skin retention in case of liposomal gel may be due to creation of reservoir effect for drug in skin due to deposition of other components of liposomes with drug into the skin, thereby increasing the drug retention capacity into the skin. They also can control pattern of drug delivery at target which is possible with dosage forms of Sneha Kalpana and liposomal drug delivery. With very genuineness, it can understand that these are serving a range of therapeutic objectives with inimitable approach on virtue of its unique structural specifications..

There are very sparse references of aditya paka found in ayurveda. Although no research work is done over this concept of adityapaka, till now in this field. So, this is an attempt made to compile data on this topic. The following mentioned above contains following:

- Total No. of Ghrita yoga :4
- Total No. of Taila yoga :25
- Total no. of Herbal yoga :12
- Total no. of Mineral yoga :1
- Total no. of Herbo-mineral yoga :16
- No. of yoga for external use :29
- No. of yoga for internal use :0

Around 20 formulations are mainly indicated for skin disorders while others are indicated in khalitya roga, indralupta, kuranda roga etc.

**CONCLUSION**

Aditya paka taila or ghrita are beneficial in treating Skin disorders. It can be used only for external purposes. These sneha kalps showed more drug retention of drug on skin which enhance the direct drug delivery at target site. The reformulation of drugs in liposomes has provided an opportunity to enhance the therapeutic indices of various

agents. So, oleaginous formulations prepared by adityapaka method have many beneficial properties and useful in many diseases.

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