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**PREPARATION AND PHYTOCHEMICAL ANALYSIS OF AGNILEPA  
(PASTE PREPARED OUT OF POLYHERBAL DRUG)**

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**ABSTRACT**

*Chikitsa* can be classified as *Antah Parimarjana* and *Bahir Parimarjana*. *Bahir Parimarjana* means, the medicine intended for external use like *Lepa*, *Upanaha*, *Udavartana*, *Abhyanga*, *Malahara*. Extensive references regarding *Lepa* (topical applications) are available in the classical texts of *Ayurveda* from immemorial time, which are used in limited circumstances due to the tedious work in the preparation of *Lepa Dravya* and its minimal shelf life.

*Agnilepa* is one among folklore practice of *Lepa Kalpana* (local applicators) which is practiced in southern part of Karnataka state in the management of different musculoskeletal and neuromuscular disorders. It is proved to be effective in the management of *Sama* (toxins from undigested food) and *Avarana* (to obstruct) conditions of *Pakshaghata* (Paralysis) and *Amavata* (Rheumatoid Arthritis). But to treat these conditions availability of the drugs in all the season and its short shelf life period was a big question. Hence attempt was made to convert this *Agnilepa* (topical applications) having 10herbal drugs into amalgam form, which is having shelf life of one year.

**Keywords: *Lepa*, Topical applications, Amalgamation**

## INTRODUCTION

Ayurveda had reached the crowning point of knowledge since the *Samhita Kala* regarding the application of *Lepa Kalpa* for therapeutic in treating skin ailments, wound management and cosmeceutical purpose in enhancing complexion. Technology key area of progress. Moreover, in contemporary era here are tremendous opportunities for further advancement of *Lepa Kalpa* for much better therapeutic, cosmeceutical purposes by adopting current science and technology. Adaptations of advanced technologies and its impact in the manufacturing of Ayurvedic *Lepa* in new dosage form is need of the hour.

Taking indication from the classics and conversion of the *Lepa* in new dosage form with more shelf life may meet the expectation of Ayurvedic practitioners. *Agnilepa* having 5 wet form and 5 dry form

of drugs have been converted into Amalgamated form. HPTLC analysis of same has been proved in retaining its efficacy in new dosage form also.

### Historical Background

Description of *Lepa* is scattered in the classics and different classification of *Lepa* can be seen based on the necessity. *Sushruta* made the classification based on the method of application where as *Vagbhata* and *Sharangadhara* in addition classified on the basis of their effect. *Charaka* has given more importance to the drugs than the thickness of *Lepa*. Congregating all these information *Lepa* can be classified into different varieties based upon the

1. Method of Application, 2. Effect of *Lepa* 3. Use of heating modality and ingredient

Table 1: Classification of *Lepa*

S. No.	Method of Application <sup>[1]</sup>	Effect of <i>Lepa</i> <sup>[2,3]</sup>	Use of heating modality and ingredient
1.	<i>Pralepa</i>	<i>Doshagna</i> (mitigates <i>dosha</i> )	<i>Ushna</i> (Hot)
2.	<i>Pradeha</i>	<i>Vishagna</i> (mitigates the toxicity)	<i>Sheeta</i> (Cold)
3.	<i>Alepa</i>	<i>Varnya</i> (enhances the complexion)	

## METHODOLOGY OF *LEPA* APPLICATION<sup>[4]</sup>:

*Lepa* should be gently rubbed in an upward or reverse direction of the hairs over the skin to make the action of application more quick & effective.

### Thickness of *Lepa*

*Sharangadhara* has directly mentioned the thickness of *Doshagna*, *Vishagna* and *Varnya Lepa* in *Anguli Pramana* as 1/4, 1/3 and 1/2 *Angula* (unit of measurement) respectively.

*Sushruta*<sup>[5]</sup> states that

- *Pradeha* is the thickest form of *Lepa*.

- *Alepa* is of medium thickness.
- *Pralepa* is the thinnest form of *Lepa*.

*Sushruta* opines that the thickness of *Lepa* application on the skin should be equal to the thickness of a buffalo's skin.

Thickness of fresh buffalo's skin before tanning is given in the range of 2.8 to 3.2 mm thick.<sup>[6]</sup> Considering *Pradeha* thickness as equal to buffalo's skin, the thickness of *Alepa* and *Pralepa* can be said as follows

Table 2: Thickness of the *Lepa*

1.Pradeha	≥ <i>Ardra Mahisha Charma</i> (wet buffalo's skin) (2.8 – 3.2 mm)
2.Alepa	In Between <i>Pradeha</i> and <i>Pralepa</i> (2.4 - 2.8mm)
3.Pralepa	< <i>Alepa</i> > 2.4 mm

#### Time of *Lepa* application:

1. *Lepa* should be applied in the morning.
2. In case of *Pitta* and *Rakta* involvement and for *Vishagna* purpose *Lepa* should be applied in the morning.<sup>[7]</sup>
3. *Lepa* should not be applied at nights because at night all the *Srotas*(channels) in the body are closed,<sup>[8]</sup> and the heat of the body comes out through the skin pores(*RomaKupa*) at nights normally and *Lepa* blocks skin pores obstructing the transfer of body heat.<sup>[9]</sup>

#### Precautions during the application of *Lepa*:

- Dried *Lepa* should not be reused. Because dried *Lepa* loses its potency.<sup>[10]</sup>
- It should not be allowed to stay after drying except to cause *Peedana* effect.<sup>[11]</sup>

- If dried *Lepa* sticks to the skin then it should be made *Ardra* (moist) and removed.<sup>[12]</sup>
- One *Lepa* should not be applied over another *Lepa* because it will produce *Vedana* (pain) and *Daha*(burning sensation) due to its *Ghanatva* (thickness).<sup>[13]</sup>
  - After the application of *Lepa* *Atibhaashya*(excessive talking), *Atihaasya* (excessive laughing), *Krodha*(anger), *Shoka* (grief), *Rodana*(crying), *SwedanaKarma*(sudation), *AtapaSevana*(exposure to sun rays), *Divaswapna*(day sleep) should be avoided. If not it may lead to *Kandu* (itching), *Twakshosha* (dryness of skin), *Pinasa* (running nose), *Drishtiupaghatha* (affects the eye sight).<sup>[14]</sup>

#### Method of preparation

Table 3: Ingredients of *Agnilepa*

NAME	LATIN NAME	FAMILY	OFFICINAL PART
<i>Kshudra Agnimantha</i>	<i>Clerodendrum phleoidis</i>	Verbenaceae	Leaves
<i>Vana Tulasi</i>	<i>Ocimum basilicum</i>	Labiatae	Leaves,
<i>Nirgundi</i>	<i>Vitex nigundo</i>	Verbenaceae	Leaves
<i>Papata</i>	<i>Pavetta indica</i>	Rubiaceae	Leaves
<i>Bhandha</i>	<i>Bradelta scandes</i>	Euphorbiaceae	Leaves
<i>Lashuna</i>	<i>Allium sativum</i>	Liliaceae	<i>Kanda, Taila</i>
<i>Lavanga</i>	<i>Syzygium aromaticum</i>	Myrtaceae	<i>Pushpaalika</i> (flower bud)
<i>Marica</i>	<i>Piper Nigram</i>	Piperaceae	Fruits
<i>Sarshapa</i>	<i>Brassica campestris</i>	Cruciferae	Seeds.
<i>Haridra</i>	<i>Curucuma longa</i>	Zingiberaceae	Rhizome

### Method of preparation of *Lepa*<sup>[15]</sup>:

**“Dravyam Ardram Shila Pistam  
Shushkam Va Sadravam Tanu  
Dehe Pralepanartham Thath Lepa Ithi  
Ucchate Bhudaihi”**

Wet drugs are made into paste form by grinding. If the drugs are in dry state they are converted into paste form by adding little quantity of water (Milk and *Sneha Dravya* depending on the need). This paste is applied over the body is called as *Lepa*.

### Preparation *Agnilepa* by the method amalgamation

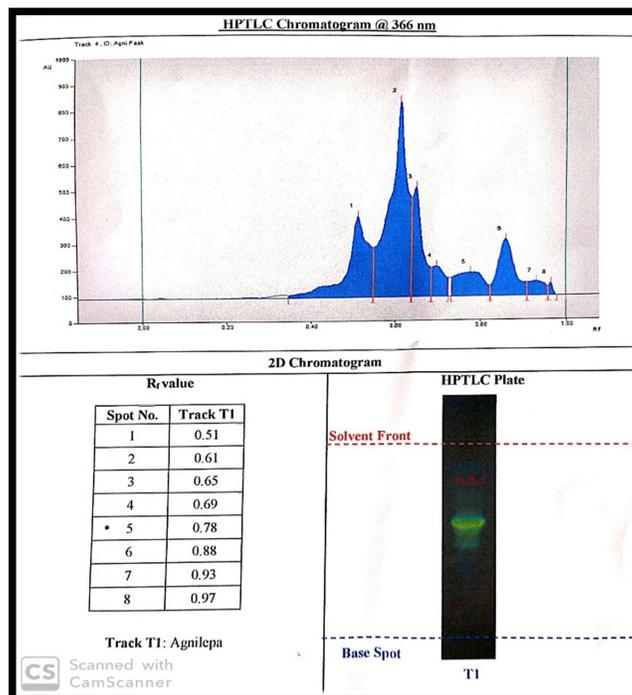
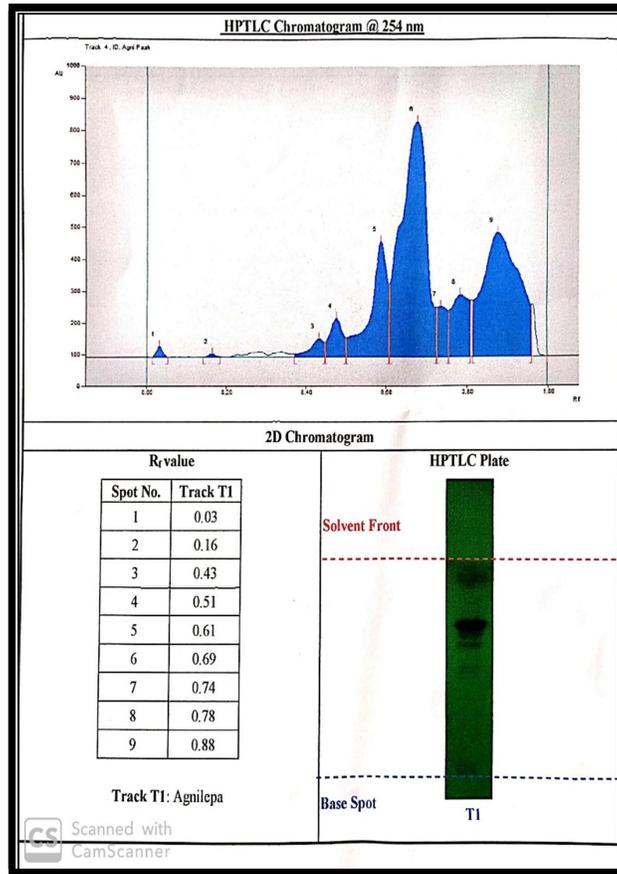
All wet drugs should be taken double the quantity of dry drugs (fresh leaves of *Kshudra Agnimantha*, *Vana*

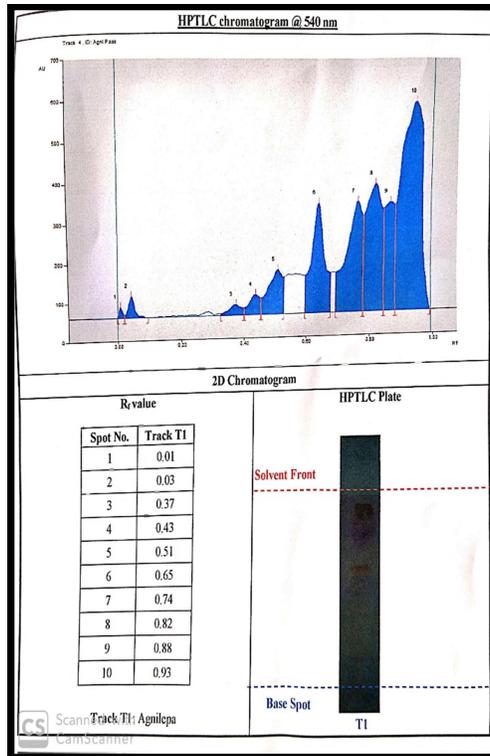
*Tulasi*, *Nirgundi*, *Papata*, *Bhandha*) cleaned and made into bolus form. Wet drugs should be taken double the quantity of dry drugs. Other herbal fine powders along with the paste of *Lashuna* should be added. All the drugs should be taken in ceramic container and will be mixed homogenously. Vessel should be closed and kept for 3 days without stirring the mixture. Two parts of emulsifier - non reactive MRZ Solution need to be added and mixed vigorously by using blender; by 60 rotations per minute for the minimum period of one hour. Such prepared mixture is called amalgamated *Agnilepa*. The paste can be applied over affected joints with the thickness of 2.6mm approximately.



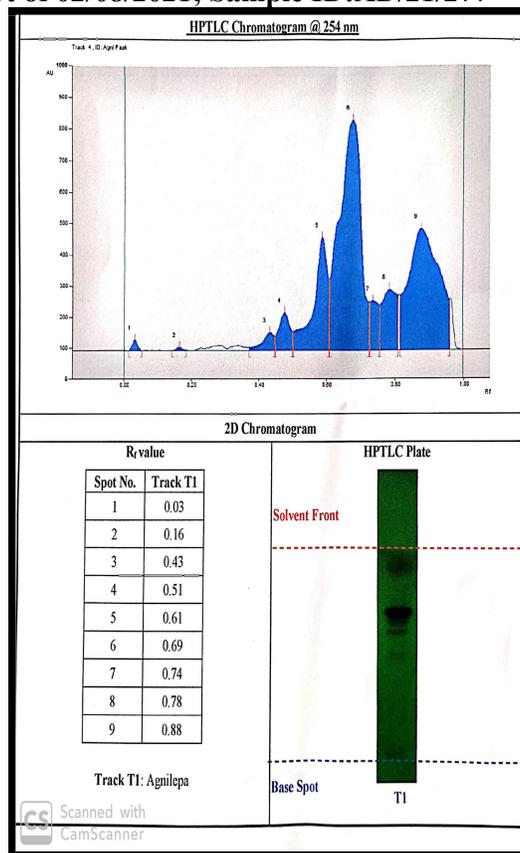
Picture showing preparation of Amalgamated *Agnilepa*

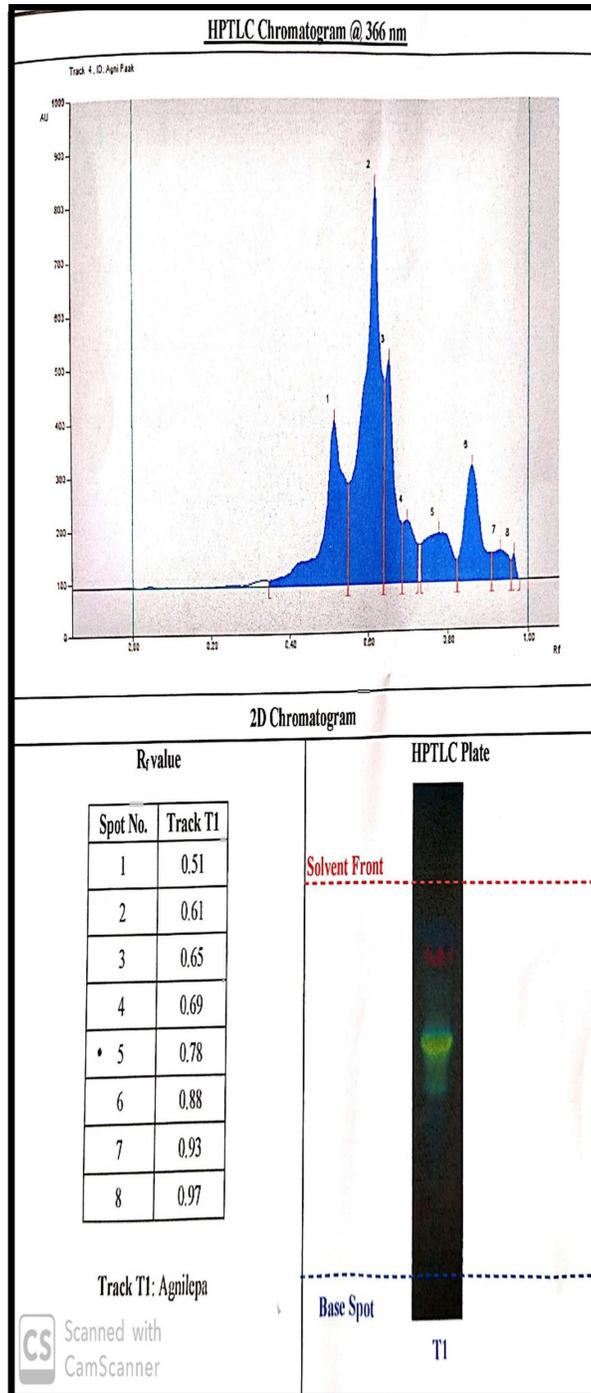
HPTLC Analysis report of 29/06/2020; Sample ID: AD/20/084

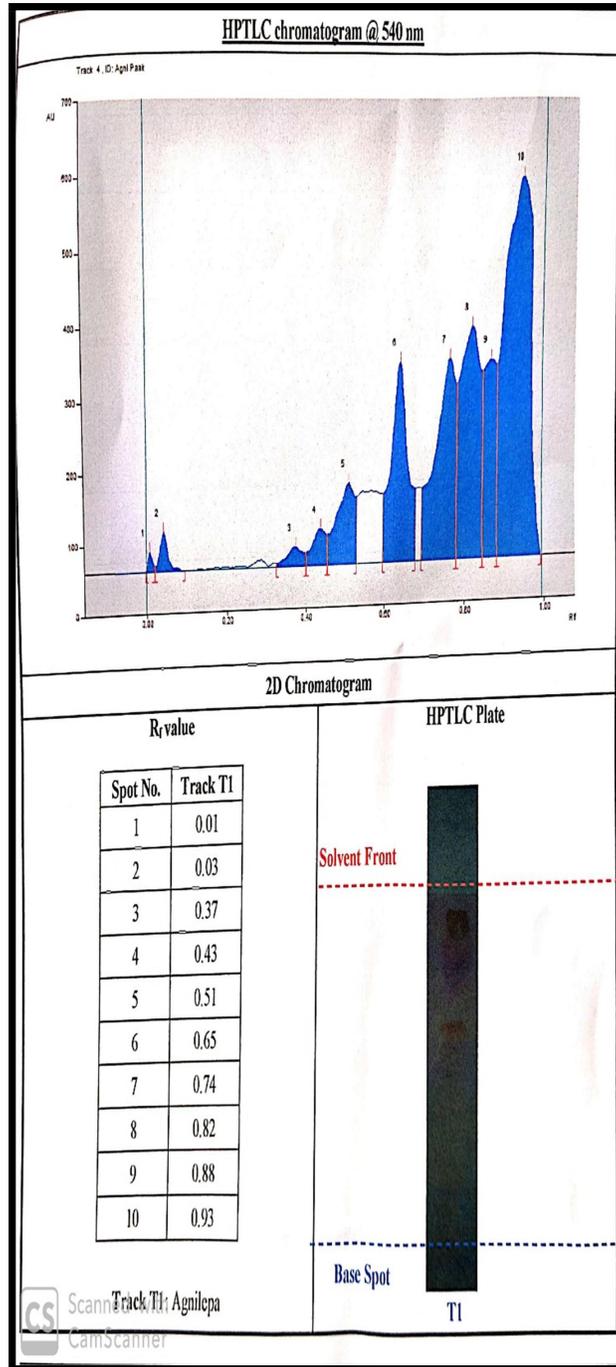




**HPTLC Analysis report of 02/08/2021; Sample ID:AD/21/277**







**DISCUSSION:**

From the pharmaceutical point of view, *Lepa* is a form of *Kalka* (Paste) *Kalpana*. Only the purpose for which it is used, decides its nomenclature. As per the classical preparation of *Lepa* fresh drugs need to be collected each time, also the prepared drugs need to be used within 24 hours of duration. Preparation of paste everyday for 10-15 days will be difficult for application and also to maintain the similar quality in every application. Due to these difficulties there will be reduction in the use of classical herbal medication which are very effective on application. To make the classical *Lepa Kalpana* to be used regularly it is need to make some advancement in formulation to preserve its effectiveness and moister of the prepared paste. The amalgamation of herbal drugs is the new trend and innovative form in classical *Lepa Kalpana* to enhance the stability and intactness of the herbal/ poly herbal formulation. In the contrary amalgamated *Agnilepa* will be having quicker absorption easy to use and there will be no drug wastage. There will be batch control over the potency of drug.

High-performance thin layer chromatography performed on day zero and after 12 months to assess effective molecules in preparation. It is observed that rf values and color bands of day zero and

12 month found similar. The presence of alkaloids, phenols and presence of tri terpinols found similar.

Organoleptic property like moisture content, odour, texture, compactness and effect on application found same as that of fresh sample, 3 months, 6 months and 1year sample of amalgamated *Agnilepa*.

**CONCLUSION:**

By going through all advantages and disadvantages it's need of hour to modify the classical concepts of *Lepa Kalpana* without altering the basic concepts of *Ayurveda*.

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