

**MODIFICATION IN AYURVEDIC ANCIENTS DOSES FORMS –
MERITS & DEMERITS****Dr. Kshitija Vilasrao Gulhane***

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Article Received: 26 February 2026, Article Revised: 16 March 2026, Published on: 06 April 2026

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DOI: <https://doi-doi.org/101555/ijarp.3635>

ABSTRACT

Advances in *Ayurveda* pharmaceuticals is just like an old *ghrita* in a new bottle. The basic principle of *Ayurveda* is same as advised by *Acharya* in *Ayurveda* classical books. We can change the only way of presentation by using modern technologies. *Panchavidh Kashay Kalpana, Avaleha, Gutika, Asav* etc are the *Ayurveda* dosage forms which can be broadly divide into solid, semisolid and liquid forms. In Ayurvedic clinical practice, practitioner faces difficulties during prescribe Ayurvedic doses form due to its appearance, non palatable, non portability. Because of these demerits, it's a great challenge in front of Ayurveda pharmaceuticals to improve ayurveda doses forms which will be easily palatable, long shelf life, simplify to dispense, easily portable, good appearance with increasing therapeutic utility and potency. Present paper aimed to describe advances in Ayurveda doses forms i.e. solid (*Rasaushadhies, Vati* etc), Semisolid (*Avaleha, Ghrita* etc), Liquids (*Panchavidh kashay kalpana, Asav, Arishta*) with clinical approach through its merits and demerits. Extract of paper concluded that all Kalpana or doses forms are aimed with isolation of active principle through different media by application of modern technologies. And with this aim we must insure that the quality or efficacy must be remain original as possible.

KEYWORDS: *Ayurveda* doses forms, *Panchavidha Kashay kalpana, vati* etc.

INTRODUCTION

Doses forms also called unit doses, These are pharmaceutical drug products in the form in which they are marketed for use, with specific mixture of active ingredients and inactive

components (Excipients), in a particular configuration and apportioned into a particular dose. For example *Triphala Churna*, *Syp Triphala*, *Triphala Ghana Vati* and *Cap Triphala* these are different doses forms of *Triphala*.

In Ayurveda classics, Kalpana define as “*Kalpanam Upyogarth Prakkalpanam Sanskaranam iti.*” *Moorchana* defined as “*Tatdwidhiprabheden Rasasyavyabhicharat:| Vyadhighatakata ya syat sa mata moorchana budhe: ||*” We can correlate doses forms with *Moorchana* in *Rasashastra* and *Kalpana* in *Bhaishajya Kalpana*. *Swaras*, *Kalka*, *Kwath*, *Hima* & *Phanta* these are basic doses forms of *Bhaishajya Kalpana* and *Kharaliya*, *Kupipakva*, *Pottali* and *Parpati kalpana* these are basic doses forms of *Rasashastra*.

We can classify ancient Ayurveda doses forms according to modern era in solid doses forms, semisolid doses forms and liquid doses forms. In solid doses forms *vati*, *gutika*, *churna*, *satva* etc are included. In semisolid doses forms *Avaleha*, *Kalka*, *Lepa*, *Malahar* etc could be included in semisolid doses forms and As an liquid doses forms *swaras*, *kwath*, *hima*, *phanta* etc could be included in Liquid doses forms.

Evolution of dosage forms includes the wide range of modification in medication from Vedic period to Modern era. *Chakradatta* added the concept of *Parpati* for the first time. So *Parpati* was an innovative idea at that time. In the process of evolution we have started making many new ways of presentation such as different dosage form, by using modern machineries, Packaging, Preservatives etc. Is the final product is genuine & effective? It is always remains doubtful about the efficacy? Efficacy can be evaluate by using standardization and quality control procedures.

Need of modifications in Ayurvedic Ancient doses forms because most of the ancient doses forms are not easy to palatable, not easy to carry, having short shelf life, not simple to dispense and not good in appearance. There should be broad scope for modifications, we have to modify Ayurvedic drugs with increasing therapeutic utility and potency.

One of the most advanced in Ayurvedic doses forms is *Sukshma Aushadhi Kalpana*. Concept of *Sukshma Aushadhi Kalpana* can be applied on Ayurvedic classical drugs & Kalpa. For *sukshmikarana* of Ayurveda drugs we use *sukhma strotogami* media for ex. lactose sugar, alcohol and processing *Vishlesh sanskara* (*Mardana* and *Melana*). *Sukshma Aushadhi Kalpana* can be prescribing after accessing *hetu*, *linga nidana* according to *Ayurveda sidhanta* and give line of treatment according to *Aptopadesh* and *Granthokta Chikitsa Sutra* for internal and external use medicine. By which method we use to prepare medicine called as *Sukshma Aushadhi Kalpana*.

In Ayurveda classics concept Sukshma is defined as: “*Yat dravyam dehasya sharirasya sukshma chidreshu Romkupprabhutishu Vishesh pravesh karoti tat sukshma uchyate*” For ex. *Saindhav, madhu, Nimb, Erand taila. Sukshma* means:

- By Size :- *Atyanta Sukshma*
- By Dose :- *Atalpa Matra*
- By Action :- *Sukshmastrotogamy*

In Ayurveda classics *Aushadhikaran* defined as: "*Alpasyapi maharthatva Prabhutasya alpakarmatam| Kuryat sansleshVisleshkalasanskara Yuktibhi ||*" The process in which *sanslesh and Vishesh sanskara* processed on *aushadhi dravya* called as *Aushadhikarana. Vishesh Sanskara :- Vibhag: Vibhaktikarana ||*

AIMS AND OBJECTIVES

Aims

- To do observational study of modification in ancient *Ayurvedic* doses forms

Objectives

- To do market study of Ayurveda doses forms.
- To do observational study of modification in ancient *ayurveda* doses forms.
- Literary study of merits and demerits of modification.

CLASSIFICATION OF AYURVEDA ANCIENT DOSES FORMS ACCORDING TO MODERN ERA

	Solid doses Forms	Semisolid doses forms	Liquid Doses forms
In Rasashastra	<i>Kharaliya Rasayana, Kupipakwa Rasayana, Parpati Rasayan, Pottali Rasayan, Bhasma/ Pishti</i>		<i>Druti Kalpana</i>
In Bhaishajya Kalpana	<i>Churna Kalpana, Vati / Gutika/ Varti Kalpana, Satva/ Masi / Kshar, Lepa Gutika</i>	<i>Avaleha Kalpana, Kalka Kalpana, Lepa/ Malahar Kalpana</i>	<i>Swaras Kalpana, Kwatha Kalpana, Hima Kalpana, Phant Kalpan, Sneha Kalpana, Asav/ Arishta Kalpana</i>

We can see the transformation of classical preparations into modified forms like tablets, capsule, syrup, etc. These kinds of modifications are the result of industrialization.

MODIFICATION OF DOSES FORMS

1. Modification of *Churna Kalpana*

Due to short shelf life and poor Palatability *churna kalpana* can be modified into compressed tablet for example Tab *Avipattikar*, Tab *Sitopaladi* etc. *Churna kalpana* also can be modified into *sukshma aushadhi kalpana* by *nimajjan pakriya*. First wet *churna* by adding water and make it like *kalka* then add 5 times rectified spirit in brown bottle and rotate it upward & downward directions 1001 times every day up to 7 days and then distill it, called as *Matrudrava*. For ex *Pushyanug Churna*.

Merits	Demerits
Shelf life can be increases by 2 month to 2 years	There may be chance of reduction in efficacy due to adding excipients.
Easy to palatable, Easy to dispense	It can't be give by <i>lehya</i> method in <i>kasa</i> by using <i>Anupana</i> .

In *Sharangadhar Samhita* shelf life for *churna* is 2 month which is extended up to 2 yrs according to drug and cosmetic act. It may be because of air tight packing.

2. Modification of *Vati Kalpana*

Due to satisfactory shelf life and palatability *vati kalpana* only modified in processing like addition of binding agents, Preservatives, Sugar coating, Silver coating, modified form. Various Eye drops are use in place of Dispersible tab letting etc In local *varti kalpana* *netra varti* and ointment, jells, oils and creams are use in *netravarti and phalavarti* mostly use in practice but not in place of Local varties.

Merits	Demerits
Long shelf life {In Sh. Sm. 1 yr. But according to D & C act For Herbal – 2 yrs, For Herbomineral – 5 yrs	There may be chance of reduction in efficacy due to change in chemical properties of preparations due to adding excipients and different types of coating.
Contamination can be prevented	Cost value increases due to modification
Easy Palatable	
Easy to Dispense	
Good Appearance	

3. Modification in *Rasaushadhi*

Rasaushadhi includes *Kharaliya, Kupipakva, Pottali and Parpati, bhasma, pishti and khanij churna*. These are modified into Tablet form for ex. Tab *Sheelapravanga*, in capsule form for ex. Cap *Neuro* and Cap *Palsineuron*. We can modify these preparations into *Sukshma Aushadhi Kalpana*.

For *sukshmikarana* of *Kharaliya rasayana*, *Kupipakva Rasayan*, *Parpati*, *Pottali*, *vasantkalpa*, *Masi* take 1 gm *kalpa churna* and add 1 gm lactose in *khalva yantra*. After processing 1001 times clockwise direction *mardana* it will be converted into *Matruvichurna* (2 gm). In second step take 2 gm *Matruvichurna* and add 18 gm lactose after processing 1001 times' clockwise direction *mardana* it will be converted into *Pratham Vichurna*. In third step take 20 gm *Pratham Vichurna* and add 180 gm lactose after processing 1001 times clockwise direction *mardana*, it will be converted into *Dwitiya Vichurna*. In fourth step take 200 gm *dwitiya Vichurna* and add 1800 gm lactose after processing 1001 times clockwise direction *mardana* it will be converted into *Trutiya Vichurna*. *Trutiya Vichurna* can be use in practice in 250 – 500 mg in TDS. Dose can be variable according to *Dushya*, *Dosha*, *Vaya* and *Bala*. Examples are *Sukshma Makardhwaj*, *Sukshma Rasasindoor* etc.

Merits and Demerits of *Sukshma Aushadhi Kalpana of Rasaushadhi*:

- **Merits:** Concise dose of prescribe medicine, Rapid action due to quick absorption of *Dugdhasharkara*, Childrens compatibility, Easily can afford *swarnakalpa* in poor patients, Saved valueable drugs due to concise dose.
- **Demerits:** After *sukshmikarana* taste become *madhura*.

4. Recent advances in the field of *Bhasmas*

Bhasmas of minerals, metals and mercurial were prepared earlier through the *manua* triturating and conventional heating. These two, triturating and heating are important factor with respect to safe and effective products. Triturating makes material fine and heating converts them into suitable compound form. During triturating greater surface of particle is exposed, resulting in better contact of other material added during process which reacts with the exposed surface and convert them into suitable compounds. Continuous triturating is not possible manually since it is difficult, laborious and time consuming. It can be made easy by mechanical process. Hence, triturating and grinding for *bhavana* should be shifted to machines. It is beneficial as well as easy to achieve the desired particle. It can be determined with the help of particle size analyzer. Fine particle can be absorbed easily by the system. After long observation and detail studies, the *Putta* system is shifted to Electric Muffle Furnace.

5. Modification in Semisolid Doses Forms

Malahar Kalpana: It is a local doses form. It can be modified into ointment, cream, gel for globalization to improve absorption, spreading ability etc. We can prepare *sukshma malahar*

kalpana by using classical *malahar kalpana*. For preparation of *sukshma malahar kalpana* from *granthokta malahar kalpana* take 1 gm *kalpa* and add 1 gm *Siktha taila in khalva yantra*, process it 1001 times clockwise direction. In second step add 18 gm *siktha taila* and rotate it for 1001 times clockwise direction called as *Pratham sanskarana*. In third step add 180 gm *siktha taila* and rotate it 1001 times clockwise direction called as *Dwitiya sanskarana*. At fourth step add 1800 gm *Siktha taila* and rotate it 1001 times called as *tritiya sanskarana*. We can use *tritiya sanskarana* in practice. We can prepare *malahar kalpana* by using *Matrudrava* for ex *Nimba or Dashanga Lepa matrudrava*. First prepare *matrudrava* from *nimba patra* by using single *drav vanaspatik nimajjan prakriya* or from *Dashanga lepa* prepare *matrudrava* by using *ghan vanaspatik nimmajjan prakriya*. After that take 80 gm *ghruta* and 20 gm *kokam taila* or *moma*, dilute it on low flame by heating. In warm mixture add 1 ml *Matrudrava* and mix it properly. *Lepa gutika* is external doses form. It can be modified into cream, liniment, oil or gel.

6. Modification in Liquid Doses Forms (*Swaras & Kwath Kalpana*)

Swaras kalpana can be modified into *Ghana Vati* for ex. *Nimba Ghana, Tulasi Ghana*. In Syrups for ex *Liq Triphala, Liq Shatavari*. *Swaras kalpana* also can be modified into *Sukshma Swaras Kalpana* by *Melana*.

Merits	Demerits
It can be preserve for long time	There may be chances of reduction in efficacy due to change in chemical properties of preparation due to heating procedure & by adding preservatives.
Contamination can be prevented	
Easy to palatable, Easy to dispense, Good appearance	

Kwath kalpana also can be modified into *Sukshma* downward directions 1001 times every day upto 7 days *Aushadhi kalpana*. For *Sukshmikarana of Kwatha* and then distill it, called as *matrudrava*. *Pratham, kalpana* take 10 ml *kwath* in brown bottle and add *Dwitiya* and *tritiya sanskarana* can do as according to alcohol 10 ml in brown bottle and rotate it upward and *swaras kalpana*. *Tritiya saskarana* can be use in practice.

Modifications of *Kwath Kalpana* Table:

- ***Ghana Vati*** (e.g., *Varunadi kashay Ghana*): Unit doses forms, Palatable, Long Shelf life, Children's compatibility. *Demerit*: Cost value increases, May be chances of reduction in efficacy.
- ***Kashay Bharad Churna*** (e.g., *Dashmool quath bharad churna*): Long Shelf life, Time saving compare to preparation of kashaya. *Demerit*: Not convenient for patients.
- ***Arishta*** (e.g., *Liq mahasudarshan kwath*): Long shelf life, Self generated alcohol itself act as a preservatives, Due to Madhya guna drug absorbs ion increases, Compatible for childrens. *Demerit*: Time involve for preparation of Arishta, Cost value increases.
- **Syrups** (e.g., *Liq Triphala*): Long Shelf life, Children compatability. *Demerit*: May be chances of reduction in efficacy.
- **Arka** (e.g., *Dashmool Arka*): No need of preservatives, Lower dose, Easily administration, Long shelf life. *Demerit*: May be chances of Reduction in efficacy.
- **Quath granules** (e.g., *Mahasudarshan kwath granules*): Easy Administration, Long shelf life. *Demerit*: Cost value increases.

For sukshmikarana of swarasa kalpana take swaras 10 ml add rectified spirit 10 ml in brown bottle and rotate it upward and downward directions 1001 times every day up to 7 days and then distill it, called as matrudrava. For ex. Vasa swaras, Shatavari swaras.

7. Modification of *Sneha Kalpana*

In oral doses form route *Sneha kalpana* can be modified into Soft gelatin capsules. For ex. Cap Cervilon. As an rectal route *Sneha kalpana* can be modified into basti sachet for ex. Basti sachet for ANC care. At local route *sneha kalpana* can be modified into cream ex *shatadhaut ghrut* or liniment for ex. Flexy liniment. **Merits**: It can be preserve for long time (*Ghrut* – extended 4 month to 1 year), Easy to palatable, Easy to dispence, Good appearance. **Demerits**: Cost value increases due to modification.

For local application we can prepare *sukshma Aushadhi kalpana* from *sneha kalpana*. For *sukshmikarana of sneha kalpana* take 5 ml til taila and add 1-2 drops *matrudrava*, after 1001 times *melan*. This 5 ml dose add in 100 ml *Til taila*, after 1001 times rotation it will be converted into *sukshma taila kalpana*. These types of *Sukshma keshya taila* available in market.

8. Modification in *Asav-Arishta Kalpana*

Asav and *Arishta kalpana* can be modified into *Sukshma Aushadhi Kalpana*, also known as *Surasav Kalpana*. For *sukshmikarana* of *asav kalpana* take *swaras or kwath* 1 part and add *Mrutsanjivani sura* 1 part in brown glass container. Keep this air tight container without disturbance for 7 days. On eighth day remove the lid of container and distill inner content. For ex. *Vasakarishtha*.

Merits	Demerits
Alcohol use in first stage of processing during <i>sukshmikarana</i> .	In <i>asav arishta kalpana</i> alcohol generate during processing called as self generated alcohol which may have more medicinal value for human body.
Due to rich concentration of alcohol in <i>sukshma aushadhi kalpana</i> dose may be prescribe in low quantity.	Alcohol concentration is not more than 15 %, due to this prescribe dose in larger than <i>sukshma aushadhi kalpana</i> .

In above process fermentation process is absent due to presence of alcohol in first stage of processing. Concentration of alcohol in *sukshma surasav kalpana* is more than *asav kalpana*.

DISCUSSION

Kalpana and *Moorchana* these are doses forms which use in Ayurveda pharmaceuticals. We can classify ancient doses form according to modern era in Solid doses Forms, Semisolid Doses Forms and liquid Doses Forms. Evolution of doses forms includes wide range of modification in medication from Vedic period to modern era. And Quality Control and Standardization these are tools which use to evaluate efficacy.

In today's scenario *Sukshma Aushadhi Kalpana* is a most advanced *kalpana*. Concept of *Sukshma* in *Sukshma Aushadhi Kalpana* is by size *atyanta sukshma*, by dose *atyalpa matra* and by action *sookshmastrotogamy* action. *Sukshma Aushadhi Kalpana* is a doses form in which classical ayurvedic doses forms go through processing like *mardana and melana* called as *vishlesh sanskara*. After processing these can be prescribe in Ayurvedic treatment according to *aptopadesh* and *granthokta chikitsa* sutra for internal and external use medicine. *Churna kalpana* can be modified into compressed tablets. In *Sharandhar Samhita* shelf for *churna* is 4 month which can be extended upto 2 years. Palatability is not a prime problem in *vati kalpana* due to this *Vati kalpana* only modified in processing like Sugar coating, dispersible. Due to modification, shelf life of *vati kalpana* extended upto 2 years for herbal tablet and 5 years for herbomineral.

Rasaushadhi can be modified into tablet, capsules and *Sukshma Aushadhi Kalpana*. For *sukshmikarana* of these *Rasaushadhi* follow the process of *sukshmikarana* for *Ghana kalpa*

by using lactose sugar and *mardana sanskara*. Due to *Sukshmikarana* of *Rasaushadhi* it can be undoubtedly prescribe in childrens, easily can prescribe *swarnakalpa* in poor patient due to low cost and act rapid due to quick absorpsion of *dugdhasharkara*. In the process of *Bhavana* preparation tituration and grinding for *bhavana* should be shifted to machine and Puta system is shifted to Electric muffle furnace. By these modification doses forms of *bhasma* can improve by using nanotechnology.

Swaras kalpana modified into *ghan vati* tablets, *Kwath kalpana* modified into *ghan vati*, *Asav kalpana* etc. Changing in doses forms improve palatability, Shelf life but because of modification can chances of demolishing properties. We can see that every Ayurvedic classical doses forms can be modified into *sukshma aushadhi kalpana*. *Sukshma aushadhi kalpana* is a concept in which classical medicine process with different types like lactose sugar or alcohol and go through process like *mardana* (anticlockwise direction *mardan*) and *melana*(upward downward direction rotation). These process may be reduces particle size and improve absorption, bioavailability, pharmacokinetic and pharmaco dynamic actions.

CONCLUSION

- All *Kalpana* or doses forms are aimed with isolation of active principle through different media by application of modern technologies.
- To globalize Ayurveda, these kinds of innovations are needed.
- With this aim we must insure that the quality or efficacy must be remaining original as possible.
- Concise dose form i.e. *Sukshma Aushadhi Kalpana* is a great advances in Ayurvedic dose forms.
- Implementing techniques of nanotechology in *bhasma nirmana* will reduce the time of production of *bhasma* and also increase pharmacokinetic action.

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