

A CRITICAL REVIEW ON SHELF LIFE OF AYURVEDIC DOSAGE FORMS W.S.R. TO KWATHA KALPANA

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ABSTRACT

Ayurveda is divided into many branches. The branch which deals with the drug and used in the form of medicine for the treatment of diseases is known as *Bhaishajya Kalpana*. This is the real source of success for a Physician. There are many drugs which are described for the promotion of health of a healthy individual. But these drugs could not be used as such; they have to undergo some procedures. It requires proper preparation for good absorption or utilization in the body. *Aushadhi Kalpana* (Ayurvedic Herbal Pharmaceutics) endorses the five fundamental dosage forms, namely, *Swarasa* (Fresh juice), *Kalka* (Herbal paste), *Kwatha* (Herbal decoction), *Hima* (Cold water infusion), and *Phant* (Hot water infusion). Among them, *Kwatha Kalpana* is the most significant and widely used dosage form in Ayurvedic pharmaceutics. In Ayurvedic literatures, 'Saviryata avadhi' term is mentioned in context of the time period during which the *Virya* (potency) of any drug remains unaffected. As per *Shangdhara* the *Kwatha*, *Kalka* and *Swarasa* are remaining stable for up to one *Prahara* (3 hrs).

Keywords: *Kwatha Kalpana*, shelf life, *Aushadhi Kalpana*, Ayurvedic doses.

INTRODUCTION

Kalpana is mainly divided into two parts viz. *Ahara Kalpana* and *Aushadha Kalpana*. Among these *Ahara Kalpana* is useful not only for to protect the health of healthy individual and also to treatment the disease. *Aushadha Kalpana* is mainly required for the treatment of diseased persons. During the *Samhita* period, *Ausadha Kalpana* has been divided into five basic preparations and other derivatives from these preparations. *Panchvidha Kashaya Kalpanas* are five basic preparations of Ayurvedic pharmacy.

Panchvidha means five categories i.e. *Swarasa*, *Kalka*, *Kwatha*, *Hima* and *Phanta*.^[1]The *Kwatha* is one of the most popular liquid dosage forms and it is third amongst the five basic *Kalpanas*. It is widely used therapeutically as well as pharmaceutically. Although a clear description is not available in *Vedic* literature but a detailed description is present in all *Samhitas* regarding its preparation, amount of water, reduction in volume of liquid etc. According to need, various formulations were designed which over the

period of time were tested for their effectiveness and depending on these observations' life span of drugs i.e. period for which it can protect its own *gunas* were calculated which was termed as *saviryata avadhi* of medicine. *Saviryata Avadhi* means amount of time that a product can be stored and still is considered safe and effective for use. Expiry date of medicines is a concept in conventional system of medicine which comes closer to the concept of *sthitisthapakatva* as far as drugs are considered. *Saviryata avadhi* is indicative of that specific period during which the *Virya* of the drug remains above certain threshold provided that it is stored in the mentioned condition. Beyond that time limit the drug may lose its potency up to some extent but it is not completely devoid of it. There is also some scientific reasoning behind the specific stability/shelf life indication of different formulations

like *Churna*, *Vati*, *Avaleha*, *Ghrita-Taila* and *Asava*, etc. by ancient knowledge maestros.

Definition:

Kwatha is one of the medicinal preparations in which the coarsely powdered medicinal drug is boiled in specific amount of water until residual portion of liquid is reduced to the required quantity of the entire matter and is filtered. The filtered liquid is termed as "*Kwatha*". According to Acharya Charaka, the extraction of water soluble substances (Transfer of mass) by boiling is known as *Srita*^[2]

Synonyms^[3]: *Srita*, *Kashaya*, *Kwatha* and *Niryuha*

Ratio of drug and water: Different Acharyas mentioned different opinion regarding the ratio of water and drug in different *Samhitas*. In *Sharangdhara Samhita*, Acharya has mentioned different ratios of water and drug particularly for *Sneha Kalpana*. It can be categorized into two parts:

1. On the basis of drug's hardness:^[4]

Table 1: The ratio of drug and water with reference to its hardness

Acharya	Hardness of Drug	Quantity of Water	Reduced up to
Sharangdhara	<i>Mridu</i>	4 times	1/4
	<i>Kathina</i>	8 times	1/4
	<i>Madhyam</i>	8 times	1/4
	<i>Ati Kathina</i>	16 times	1/4

2. On the basis of drug's quantity:^[5]

Table 2: The ratio of drug and water with reference to its quantity;

Sr. No	Quantity of <i>Kwatha Dravya</i>	Quantity of water
1.	<i>1 Masha to 1 Pala</i>	16 times of water
2.	Above 1 <i>Pala</i> upto 1 <i>Kudava</i>	8 times of water
3.	Above 1 <i>Kudava</i> upto 1 <i>Prastha</i>	4 times of water
4.	Above 1 <i>Prastha</i> upto 1 <i>Khari</i>	4 times of water

Like this, water ratio should be decided by the quality and quantity of the drug. If the water is added less than its proper measurement it will burn up earlier and essential standards of *Kwatha* will not be maintained. Such *Kwatha* becomes poor in qualities.

Dose of *Kwatha* (*Matra*)

- According to Acharya Sharangadhara^[6],
 - 2 *palas* (8 tolas) (96ml)
 - 1 *pala* is the *Madhyama* *matra*.

- According to Acharya Bhavaprakasa^[7]
 - Uttama* – 1*pala* (48ml); *Madhyama* - 3*karsha* (36ml); *Adhama* - 2*karsha* (24ml)
- According to Acharya Yadavji - 1 *pala* (4 tola)
- According to Acharya Vangasena and Acharya *Vrinda Madhava* - 4 *pala*^[8]
- According to *Adhalmala Matra* is always decided according to *dosha*, *desa*, *kala*, *bala* and *vyadhi*.^[9]

Prakshepa Dravyas: *Prakshepa dravyas* added to *Kwatha* increase palatability & therapeutic efficacy.

Table 3: Quantities of various *Prakshepa dravyas* as mentioned by different scholars;

Sr. No.	Acharya	Prakshepa Dravya	Matra (Ratio / Quantity)	Vyadhi
1	Charaka	<i>Kshira, Ghrita, Guda, Taila, Gomutra, Churna, Guggulu, Drava, Kalka etc.</i>	1 Karsha (each)	As directed by Physician.
2	Sharangdhara ^[10]	<i>Madhu</i>	1/16 th Part of Kwatha 1/8 th Part of Kwatha 1/4 th Part of Kwatha	<i>Vataja</i> <i>Pittaja</i> <i>Kaphaja</i>
		<i>Sharakara</i>	1/16 th Part of Kwatha 1/8 th Part of Kwatha 1/4 th Part of Kwatha	<i>Kaphaja</i> <i>Pittaja</i> <i>Vataja</i>
		<i>Jiraka, Guggulu, Kshara, Lavana, Shilajatu, Hingu, Trikatu</i>	1 Shana (Masha =4g)	As directed by Physician
		<i>Kshira, Ghrita, Guda, Taila, Mutra, Churnaetc.</i>	1Karsha (each) (12g)	As directed by Physician
	Kashyapa ^[11]	<i>Guda, Kshira, Sita Hingu, Saindhava</i>	1 karsha each 1 masha each	As directed by Physician

Time of administration^[12]: Generally when the time of administration of *kashaya* is not told, the *kashaya* should be taken in the morning.

Shelf life^[13]: Ayurvedic Formulary of India (AFI) also has specified some time period during which the

formulation retains its efficacy. The longer stability in recent dosage forms is naturally the gift of the present packaging technology which was not much more developed in the ancient time.

Table 4: Shelf life (*Saviryata Avadhi*) of ayurvedic formulations (Ayurvedic Formulary of India)

Sr. no.	Name of the dosage forms	General dose	Self life (<i>Saviryata Avadhi</i>)
1.	<i>Kwatha</i>	80ml	3 hrs
2.	<i>Churna</i>	12 gm	Two year
3.	<i>Vati</i>	500 mg-1 gm	Three year
4.	<i>Ghruta</i>	6-12 gm	Two year
5.	<i>Taila</i>	External application	Three year
6.	<i>Asava/Arista</i>	12-24 ml	10 year
7.	<i>Avaleha</i>	50 gm	Three year
8.	<i>Satwa</i>	500mg -1 gm	Two year
9.	<i>Bhasma(except Naga, Vanga and Tamra)</i>	125-500 mg	10 year
10.	<i>Naga, Vanga and Tamra Bhasma</i>	125-500 mg	5 year
11.	<i>Pisti</i>	125-500 mg	10year
12.	<i>Sindoora</i>	60 mg- 125 mg	10 year

DISCUSSION

A major part of therapeutic preparations mentioned in the ancient texts are in the form of *kashayas* which are

in daily practice. *Kashayas* are widely used as *bhavana dravya* in many of drug purifications. *Kashaya's* are indicated as *anupana* in many

conditions. The potency of *panchavidha kashayas* are in increasing order from *phanta* to *swarasa*. Kwatha, Sheetha and phanta kashayas were rapidly absorbed and onset of action was found to be quick. These *kashayas* were prepared from single drugs or from a group of drugs. Therefore *kwatha kalpana* has more importance in clinical practice. In *Ayurvedic literatures*, 'Saviryataavadhi' term is mentioned in context of the time period during which the *Virya* (potency) of any drug remains unaffected¹ due to environmental/microbial deterioration; whereas in the contemporary system, the term 'Shelf life' is used to indicate the time period during which an API (Active Pharmaceutical Ingredient) or FPP (Finished Pharmaceutical Product) is expected to remain within the approved stability specification, provided that it is stored under the conditions defined on the container label.^[14]

CONCLUSION

Kashayas are prepared in aqueous media and this decreases the stability of the product. *Kwatha* is remain stable for up to one *Prahara* (3 hrs). So for a good result freshly prepared *Kwatha* should be used to get intended efficacy.

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Source of Support: Nil

Conflict Of Interest: None Declared

How to cite this URL: Swapna Sandeep Kare: A Critical Review On Shelf Life Of Ayurvedic Dosage Forms W.S.R. To Kwatha Kalpana. International Ayurvedic Medical Journal {online} 2019 {cited July, 2019} Available from: http://www.iamj.in/posts/images/upload/1153_1156.pdf