

REVIEW ARTICLE ON IMPORTANCE OF *KWATHA KALPANA*Vd. Kiran D. Kute^{1*} and Vd. Shailaja P. Chondikar²¹MD Scholar, Dept. of Rasa Shastra and Bhaishajya Kalpana, Shree Saptashruni Ayurved College and Hospital, Hirawadi, Nashik, Maharashtra India.²Professor and HOD, Dept. of Rasa Shastra and Bhaishajya Kalpana, Shree Saptashruni Ayurved College and Hospital, Hirawadi, Nashik, Maharashtra India.

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ABSTRACT

Ayurveda offers various effective basic formulations to treat different diseases, but challenges like short shelf life and unappealing taste make it difficult for patients. *Kalpans* enhance the potency of medicines by adding special properties through processes like purification (*Shodhana Karma*), making them durable and palatable. They also help adjust the *Doshas* balance based on the severity of the disease, customizing treatment to the patient's needs. *Kwatha Kalpana*, a fundamental form in Ayurvedic pharmacy, it is one among basic *Panchvidh Kashaya Kalpana* of *Bhaishajya Kalpana*. it is pivotal in preparing various secondary dosage forms like *Snehapaka* and *Avleha*. Achieving high-quality *Kwatha* hinges on key pharmaceutical factors such as temperature control, choice of vessel, water quantity, raw drug particle size, and heating duration. These factors are critical for ensuring the standard quality of *Kwatha*.

KEYWORDS: *Kwatha*, *Panchvidh Kashaya Kalpana*, Dosage form, Ayurvedic pharmaceuticals.**INTRODUCTION**

Ayurveda, an ancient healing system, emphasizes a holistic approach with minimal side effects. Within its treatment framework, practitioners focus on four essential components: the physician (*Bhishak*), medicinal substances (*Aushadhravya*), patient (*Rugna*), and attendant (*Paricharak*). Among these, *Aushadh Dravya* plays a vital role in therapy and can be administered in various forms tailored to the individual's condition and disease. *Panchvidh Kashaya Kalpana*, comprising *Swarasa*, *Kalka*, *Kwatha*, *Hima*, and *Phanta*, serves as the foundation of Ayurvedic pharmacy, with *Kwatha Kalpana* standing out as the most prominent and widely utilized dosage form.

SYNONYMS

In *Ayurveda Kashaya*, *Shruta*, *Niruha* are synonym words have been used in different classics for *Kwatha*.

NIRUKTI

The word *Kashaya* generally refers to *Kashaya Rasa* (astringent taste). 'Ka' denotes *Kaya* - *Sharir* (body), 'Sha' denotes functions, 'Ya' denotes appropriate regulation. *Kashaya* means the one that helps to regulate body functions or helps maintain equilibrium.^[1,2]

DEFINITION

Kwatha is medicinal preparation in which coarsely powdered medicinal drug is boiled in sixteen times of water until residual portion of liquid is reduced to one eighth of entire matter and is filtered. The filtered liquid is termed as *Kwatha*.^[3]

STANDARDS FOR KWATHA PREPARATION**Proportion of Water**

In the preparation of *Kwatha Kalpana*, the proportion of water is a crucial factor. Typically, *Kwatha* involves boiling one part of the herb with sixteen parts of water in an open vessel over gentle heat until it reduces to one eighth of its original volume.^[4] The quantity of water used varies based on the hardness of the herb: for softer herbs (*Mrudu Dravya*), the water-to-herb ratio is four times, for moderately hard herbs (*Madhyam Dravya*), it's eight times, and for hard herbs (*Kathina Dravya*), it's sixteen times. These ratios, outlined in ancient texts like the *Sharangdhar Samhita*, also consider the quantity of the herb used.^[5] Different Ayurvedic scholars have provided varying ratios of water to herb, and the *Sharangdhar Samhita* further elaborates on the weight-based ratio of drug to water.

Table 1: Shows proportion of Kwatha Dravya and water.

Quantity of Kwatha Dravya	Quantity of water
1 Masha - 1 Pala	16 times of water
Above 1 Pala upto 1 Kudav	8 times of water
Above 1 Kudav upto 1 Prastha	4 times of water
Above 1 Prastha upto 1 Khary	4 times of water

Vessel

The container employed must be inert to pharmaceuticals, serving a distinct purpose in Kwatha formulation. Historical texts advocate earthenware vessels for their ability to regulate temperature and their non-reactive nature with the ingredients.^[6] It is advised to keep the vessel uncovered during the entire boiling phase and to periodically stir the Kwatha with a ladle.^[7] Presently, stainless steel containers are commonly utilized owing to their widespread availability, affordability, and ease of upkeep, thus frequently being the preferred choice.

Temperature

Regulation of temperature protects heat labile phyto constituents.^[8] *Madhyamagni* is term used to denote mild to moderate heat in preparation of Kwatha. Temperature holds the significant factor in preserving constituents. Therefore, during the preparation of Kwatha, temperature should be maintained 85°-90°C.^[9]

Particle Size

Primarily, *Yavkut Churna*, characterized by its coarse texture, serves as the primary ingredient in Kwatha preparation. The reduction in particle size plays a crucial role, as smaller particles increase the surface area, facilitating the infusion of phyto constituents into the solvent, namely water, and vice versa. Kwatha exhibits *Panchbhautik* properties, encompassing *Shabda* (sound), *Sparsha* (touch), *Roop* (appearance), *Rasa* (taste), and *Gandha* (smell). Evaluation of Kwatha involves assessing its organoleptic attributes such as colour, odour, taste, and consistency. Various physical parameters, including specific gravity, pH value, water-soluble extractive value, and alcohol-soluble extractive value, can be determined using established pharmacopeial techniques.

ANALYTICAL STUDY OF KWATHA

An analytical examination of Kwatha involves both qualitative and quantitative analyses, which are pivotal for standardizing its composition. This standardization process encompasses physico-chemical assessments, qualitative examinations of both inorganic and organic constituents, thin-layer chromatography (TLC), UV-visible spectrophotometry, and high-performance liquid chromatography (HPLC) fingerprinting studies.^[10] Qualitative tests are utilized to identify the presence of functional groups, crucial for expressing biological activities, such as tannins, mucilage, ascorbic acid, and saponins.^[11] HPLC fingerprinting offers a more straightforward and efficient method, providing a

graphical representation of the fingerprint profile through graphs and densitograms.

Dose of Kwatha

1. *Sharangdhar* - 2 Pala
2. *Bhavprakash*
 - a) *Uttammatra* - 1 Pala
 - b) *Madhyammatra* - 3 Karsha
 - c) *Adhammatra* - 2 Karsha
3. *Sushruta* - 1 *Anjali* = 4 Pala
4. *Vangasen* - 4 Pala
5. *Vrindamadhav* - 1 Pala

Saviryata Avadhi

Saviryataavdhi of Kwatha *Kalpna* is 1 *Prahar* i.e., 3 hrs.

Preservatives

Decoctions deteriorate quickly and are most effective when consumed promptly after being made, as they are not suitable for prolonged preservation. To ensure the longevity of their medicinal benefits, it is essential to incorporate inert preservatives. Of the available choices, sodium benzoate is preferred in industrial settings due to its ability to effectively maintain the potency of the decoction.

Prakshepa

Prakshepa Dravya added to Kwatha increases palatability and therapeutic efficacy.

Prakshepa Dravyas of Kwatha and their quantity

- *Sita* should be added in Kwatha either in 1/4th, 1/8th or in 1/16th part depending upon *Vata*, *Pitta* and *Kapha* type of disease.^[12]
- If *Madhu* is to be added then its quantity should be 1/4th for *Kaphaja*, 1/8th for *Pittaj* and 1/16th for *Vataj* disorders.^[12]
- *Jiraka*, *Guggulu*, *Kshara*, *Lavana*, *Shilajatu*, *Hingu* and *Trikatu* should be added in one *Shana* (3gm) quantity.
- *Kshir*, *Ghrita*, *Guda*, *Taila*, *Mutra*, *Kalka*, *Churna*, *Kalka* etc. should be added in one *Karsha* (12gm) quantity.^[13]

Upkalpana of Kwatha - *Pramathya*, *Kshirpak*, *Ushnodak*. *Haarita Samhita* has mentioned total 7 types of Kwatha, viz. *Pachana*, *Deepana*, *Shodhana*, *Shamana*, *Tarpana*, *Kledana*, *Shoshana*.^[14]

Table 2: Shows types of Kwatha according to Haarita Samhita.

SN	Type of Kwatha	Proportion of Reduction	Time of administration
1	<i>Pachana</i>	1/2	<i>Nisha</i>
2	<i>Deepana</i>	1/10 th	<i>Aparhana</i>
3	<i>Shodhana</i>	1/12 th	<i>Suryodyatpurve</i>
4	<i>Shamana</i>	1/8 th	<i>Poorvhane</i>
5	<i>Tarpana</i>	Equal	<i>Prabhate</i>
6	<i>Kledana</i>	1/4 th	<i>Prabhate</i>
7	<i>Shoshana</i>	1/16 th	<i>Nishite</i>

Advancements in Kwatha Kalpana

1. *Ghana* (Concentrated Extract): *Ghana*, also known as *Rasakriya*, represents a concentrated dosage form derived from *Kwatha Kalpana*. This modification involves boiling the *Kwatha* until it reaches a semi-solid state, followed by drying to achieve a solid form.^[15]
2. Syrup: Syrup preparation involves initially preparing a decoction by boiling the herbal ingredients with eight times the amount of water until the volume reduces to one-fourth of the initial volume. The decoction is then cooled, filtered, and mixed with sugar at a concentration of 66.7%. The mixture is boiled until it reaches a consistency resembling 1-2 threads.^[16]
3. *Pravahi Kwatha* (Fermented Decoction): This formulation is created through a fermentation process and can be considered a secondary formulation of decoction. It involves adding sweetening and fermenting agents to the decoction to enhance its properties.^[17]

DISCUSSION

Panchvidh Kashaya Kalpana serve as the foundational formulations in Ayurvedic pharmacy, with all other formulations stemming from them. *Kwatha*,^[18] or decoction, acts as the cornerstone for various Ayurvedic preparations such as *Asava-Arishta*, *Taila*, *Ghrita*, and *Avleha*. It is administered internally for drinking, medicated enemas, or externally for eye wash and *Swedana* purposes. *Kwatha* stands out as one of the most commonly used dosage forms in Ayurvedic pharmaceuticals, offering a broad spectrum of therapeutic applications. The standardization of classical Ayurvedic dosage forms has garnered significant interest from academic, research, industrial, and regulatory sectors. With globalization, there's a growing need to develop and enhance these dosage forms without compromising their therapeutic efficacy. Consequently, there has been a transformation from traditional decoctions to various improved forms such as *Kashaya* powder, *Rasakriya*, *Ghana*, tablets, capsules, syrup, and *Pravahi Kwatha*. This evolution offers numerous advantages over traditional *Kwatha* preparations, including enhanced acceptability and prolonged shelf life.

CONCLUSION

Kwatha stands as a powerful therapeutic liquid formulation containing water-soluble constituents that drive its therapeutic effects. It holds a paramount position in Ayurvedic pharmaceuticals, often referred to as decoctions. *Kwatha Kalpana* involves the aqueous extraction of a blend of herbs, extracting their therapeutic attributes into water through the application of heat. This classical dosage form is widely utilized, allowing for the extraction of beneficial properties from botanicals and their incorporation into a liquid medium for medicinal purposes.

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