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A BRIEF STUDY ON AYURVEDIC KWATH: A REVIEW

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Abstract

In Ayurvedic system of medicine, Kwath is the most important and commonly utilised dosage form. It is one of Bhaishajya Kalpana's fundamental Panchvidh Kashaya Kalpanas. It serves as the foundation for other secondary dossage forms like Snehapaka, Sandhana Kalpana, Avleha, and so forth. Thus, Kwatha needs to be of standard quality in order to obtain good quality from this dosage form. It is crucial to focus on the pharmaceutical components of kwath, such as temperature, preparation vessel, water content, raw drug particle size, and heating time, in order to achieve high-quality results. To guarantee that these dosage forms are therapeutically relevant, it is critical to understand their basic principles and justifications while adapting to contemporary technology for suitable pharmaceutical and clinical use. Kwath or decoctions are one of the most popular traditional dosage forms. They include extracting a mixture of herbs in water and heating them to release their therapeutic qualities. Even though it has therapeutic benefits, its short shelf life shows low palatability and difficult preparation method mean that it is not used for long periods. This essay goes into great length about Kwatha, the herbal mixture, addressing both specific and in-depth classical material. A paradigm shift towards polyherbal formulations rather than the conventional approach of a single drug-based system has been observed recently in the pharmaceutical sector. The quality and efficacy of herbal medications have decreased due to rising demand. To ensure ongoing demand and therapeutic efficacy, suitable standardisation processes must be developed from the unfinished polyherbal mixtures to the raw medicines. However, there are differing views on how to standardise these home cures. Decoction, or kwath, is the basis of self-administered herbal medicines in India. Herbal decoctions, which are usually brewed in water because most plant active components are soluble in it, are the basis for potent and effective Ayurvedic treatments. l of Ayurvedic Medicine, Vol 11 (2), 155-164

Key Words: *Ayurvedic Dosage Form, Kwatha, Kashayam, Decoction, Standardization, Ayurvedic Formulation.*

INTRODUCTION

When it comes to basic health issues, almost 75% of the world's population turns to traditional medicine. India, the home of over 45,000 plant species, is known for its ayurveda medical fundamentals. 7500 of them find practical use while recovering. Mostly relying on the therapeutic properties of plants, Ayurveda is a holistic discipline that emphasises both disease prevention and disease restoration. By employing a combination of natural ingredients to eradicate the underlying cause of illness and promoting a healthy lifestyle, Ayurveda aims to restore equilibrium and prevent it from recurring. Textbooks on Ayurveda, such as the Sarngadhara Samhita, emphasise the significance of blending several herbs in a

specific ratio to reduce toxicity and enhance medicinal effectiveness. Kashayam or kwath, as defined by S. Samhita's Kwatha Vidhi, is the filtered decoction that results from simmering a blend of herbs with sixteen times water over a low heat for an extended amount of time, until the volume is reduced to one eighth [2]. It can be taken straight out of the bottle or used as a starting point for preparing other dosage forms. Plant mixtures and mixed extracts are preferred over isolated ones in traditional Indian medicine. Writings like the Samhitas and the Vedas mention herbs, which are among its most potent therapeutic elements. Herbal treatments used in Ayurveda are often prepared in a range of dosage forms, the majority of which are blends of many herbs.[3, 4]. On account of its natural origin and lack of side effects, the demand for ayurvedic drugs have aggrandized across the world. The commercialization of traditional medicines has led to the widespread use of adulterants and low cost substitutes, because of non-availability and high cost of standard authentic drugs. Hence it has now become imperative to testify polyherbal formulations as per modern research parameters to standardize and evaluate its quality [5] Kwatha (herbal decoction), Hima (cold water infusion), Phant (hot water infusion), and Swarasa (fresh juice) are the five fundamental dose types. These forms are supported by Bhaishajya Kalpana (Ayurvedic Herbal Pharmaceutics). [6] The herb, either wet or dry, is coarsely pulverised and cooked with water; the liquid that remains after filtering is called kwath. The mixture known as decoction is created by boiling a large amount of water with herbs, reducing it to the desired amount, and then straining it. Moreover, kalpana refers to the arrangements.In many Ayurvedic texts, the terms Kwath as-Kashaya ,Shrita, Niryuha, Kadha&Decoction[7]A common method of Ayurvedic treatment for a variety of illnesses and diseases is kwasha, or decoction. A standard dosage is one part (weight) of the coarsely crushed drug (dry herb) to which 16 parts (volume) of water are added. Subsequently, the volume of water is decreased to 4 parts. Eight parts are to be derived from Kwatha, which is utilised in internal medicine.[8]Kwath kalpana decoction refers to a concentrated liquid that is produced by boiling therapeutic herbs.Kwatha (herbal decoction), Hima (cold water infusion), Phant (hot water infusion), and Swarasa (fresh juice) are the five fundamental dose types. These forms are supported by Bhaishajya Kalpana (Ayurvedic Herbal Pharmaceutics). [9]The ancientmasters were in search of a method to extract the maximum amount of water-soluble herb chemicals. So, they boiled herbs with water. With this method, the maximum amount of extract was generated. Such a dosage form is called Kwath or Kashayam.[10]

Fig 1: KWATH [11]

CLASSIFICATION OF KWATH [12]

A variant of kwath is described by different authors in different Ayurvedic literature.

AUTHOR	KWATH	TYPES
Charaka	Panchvidha	Swarasa, Kalka, Kwatha, Hima, Phanta
Sushruta	Shadavihda	KSheera, Swarasa, Kalka, Shrita, Sheeta, Phanta
Kashyapa	Saptvidha	Churna, Sheeta, Swarasa, Abhishva(Madya), Phanta, Kalka, Kwatha
Sharangdhara	Panchvidha	Swarasa, Kalka, Kwatha, Hima, Phanta
Vagbhatta	Panchvidha	Swarasa, Kalka, Kwatha, Hima, Phanta

STANDARDS FOR KWATHA PREPARATION

- **Heat, Temperature**
  Heat and temperature play a significant role because they have the potential to break down some of the thermo-labile active ingredients. Traditionally, the production of decoction was done with mandagni, a gentle heat that is often kept between 85 and 90°C. [13] Occasional stirring is necessary throughout the procedure to ensure that the components are properly homogenised.[14]

- **Duration of heating**
  The phrases used in traditional Kwath preparation processes are one-fourth and one-eighth of the initial water volume. More or less of Kwath's active ingredients can be removed depending on the degree of boiling and Kwath's Laghutwa (Easy to digest) and Gurutwa (Hard to digest) qualities. Owing to thermosensitivity, there is a possibility that undesired phytoconstituents will enter Kwath and diminish active constituents when excessive heat is applied. Until equilibrium is reached—that is, the concentrations of active principle in the solvent and the solid substance are equal—the rate of mass transfer falls as the concentration of active principle in the solvent rises. After that, the active principle will no longer mass transfer from the plant material to the solvent. [15]
- **Vessels**
  Earthen pots [16] have been used for a long time to regulate temperature, reduce environmental interaction, and stop the loss of volatile or active ingredients. Instead of using an earthen pot, containers coated in metallic coatings made of copper and vessels coated with moist soil from the outside were also utilised.[17] Nowadays, vessels made of stainless steel are chosen because they are readily available, reasonably priced, and require little upkeep.
- **Analytical Study of Kwatha**
  The standardisation of Kwatha involves the use of both qualitative and quantitative study. Physico-chemical analysis, qualitative inorganic and organic analysis, thin-layer chromatography (TLC), UV-visible spectrophotometer, and high performance liquid chromatographic (HPTLC) fingerprint investigations were used to standardise Kwatha.[18] The presence of functional groups, such as tannins, mucilage, ascorbic acid, saponins, etc., which are crucial for the manifestation of biological activity, is found through qualitative testing.[19]
- **Proportion of Water**
  Water content varies according to the drug's hardness (Murudu, Madhyam, Kathina Dravya, etc.) The Sharangdhar Samhita also defines the proportion of medication to water in terms of its weight-based quantity, shown it Table 1.

S.No	Quantity of Kwathaya	Quantity of water
1.	1 Masha - 1 Pala	16 times of water
2.	Above 1 Pala upto 1 Kudav	8 times of water
3.	Above 1 Kudav upto 1 Prastha	4 times of water
4.	Above 1 Prastha upto 1 Khary	4 times of water

- **Particle size**
  Usually, the raw material's particle size is barley grain size or Yavkutchurna, a coarse powder.[20]

Advancement in Kwatha

- **Ghana**
  Ghana, also known as Rasakriya, is a concentrated dose form that is an adaptation of Kwatha Kalpana. The Kwatha is made by boiling it until a semisolid condition is reached, and then drying it until it solidifies.[21]
- **Syrup**
  The first step in making syrup is to make a decoction of the medicine, which is then prepared by boiling it with eight times as much water as before, until the final volume is one-fourth of the beginning volume. The infusion was thereafter allowed to cool and sieved. The final herbal syrup was made by filtering the filtrate, adding sugar at a concentration of 66.7%, and boiling the mixture until it reached a consistency of 1-2 threads.[22]
- **Pravahi kwatha/aristha**
  It is produced by fermentation and is similar to the secondary formulation of a fermented and sweetened decoction. All-natural Treatments Sara Samgraha refers to a "Pravahi Kwatha," however there are no obvious references, and Aristhas (fermented preparation) gets its own alcohol on its own, which is obtained by ordinary means and acts as a natural preservative. [23]
- **Granules**
  Due to the lengthy preparation process, the earlier decoctions are no longer recommended. It has resulted in the creation of several industrial items in easily useable forms. The different liquid solutions have varying degrees of efficacy since they are either fermented to extend their shelf life or contain sugar or preservatives. As shown by the fresh decoction and these liquids, there is typically an imbalance in the dosage. Additionally, improper dose consumption could undermine the efficacy.The fresh decoction and these drinks seem to have different doses most of the time. The effectiveness could potentially be jeopardised by consuming the dose incorrectly. Transportation-related problems also arise from the potential for spills, breaks, and leaks. An attempt is being made to resolve these problems. With the aid of contemporary technology, the liquid form has been transformed into easily soluble granules [24] that retain the same potency as newly made decoction. Each single dose pouch contains two grammes of these. For consistency and efficacy, the components are standardised,

micronized, and granulated. The granulated form has the benefit of no longer leaking or breaking, making it easier to use.

- **Churna**
  The powdered version of kwatha upkalpana is called churna. Here, the decoction is heated and vacuum-processed, causing the water content to evaporate and giving us a semisolid form similar to paste. After the semisolid paste is put into a spray drier, the residual moisture is allowed to evaporate, producing dry powder at the end. The characteristics of medications are not changed, and no additional chemically active components are utilised.

- **Gutika/ Vatika**
  In practice, this kwatha upkalpana is very popular and quite flavorful. The semisolid paste, similar to kwatha, is made from jaggary, guggulu, etc. After granulating the mixture, gutika or vatika, such as Eladi gutika, are made by hand or by machines. [25]

Advantages

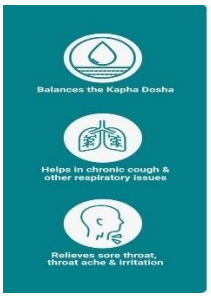
Both exterior and internal illnesses are treated using decoction.
• Its wide surface area facilitates rapid absorption through the digestive tract.
• It is therapeutically useful in a variety of ways.
• It can be administered in several ways, such as medicated enemas (basta), nasal drops (nasya), hot foementations (nadisweda & dharasweda), washing (dhavana), cleansing (prakshalana), and eyedrops (ashchotana).
• It serves as a foundation for the preparation of other formulations, such as arishta-medicated wine, taila medicated oil, and ghrita-medicated ghee.
• It is utilised in several pharmacological procedures, such as trituration (bhavana dravya), detoxifying (shodhana dravya), and anupana (vehicle with other dose form).

Disadvantage

The product has a limited shelf life; prolonged storage leads to microbial contamination.
• To achieve the intended therapeutic effect, high dosages must be given.
• Due to flavour, particularly if bitter, it has low patient compliance.
• Decoction must be handled, packaged, and transported with extreme caution because it is a liquid.
• In commercial formulations, adding preservatives may have unfavourable effects such irritating mucous membranes.
• For substances that are heat-sensitive, it is useless.
Heating may cause volatile components to be lost.
• When a large-scale preparation procedure is altered improperly, it can sometimes have negative effects and reduced efficacy if improperly stored.[26]

MEDICATED FORMULATIONS

CATEGORY	INGREDIENTS / FORMULATION	MARKETED PREPRATION
IMMUNITY BOOSTER [27]	Tulsi Leaves Cinnamon,Ginger,Black pepper	
SKIN-RELATED DISORDER [28]	Manjishta Mustaka Karanja beej Shunthi , Kustha Bharangi), Haridra), Daruharidra , Haritaki , Bhibhitaki, Amalaki etc.	

COUGH SYRUP[29] EFFECTIVE IN ENLARGED LIVER ANDSPLEEN, SW &APPETITE .	PunarnavaGuduchi,DaruHaridra, Harad,Sunthi, Kutaki&Patol	 
USEFUL IN RESPIRATORY ISSUES,RELIEVING JOINT DISCOMFORT&SUPPORTS MALE AND FEMALE REPRODUCTIVE HEALTH[30]	Shalaparni, Prushniparni, Kantakari, Gokshura, Sonapatha, Bilva, Gambhari, Patla, Brihati	
IMPROVING THE CARDIOVASCULAR HEALTH & BLOOD SUGAR AND CHOLESTEROL LEVELS[31]	Tulsi,Dalchini,Sunthi, Krishna Marich, Draksha ,Nimbu Ras&Jaggery	

List of formulations in Ayurvedic Formulary of India, Part-III[32]

Sl. No.	Class of the Formulation	Name of the Formulation
1)	Kvātha Cūrṇa	Agasti Modaka
2)		Abhayādi Modaka
3)		Āmalakī Jīvana
4)		Candrāvaleha
5)		Jirakādi rasāyana
6)		Trivṛdādi Modaka
7)		Bṛhad Vāsāvaleha
8)		Bṛhad Haridrākhaṇḍa
9)		Yavādi Kvātha Cūrṇa
10)		Malayūphala Modaka

Conclusion

This article summarises the significance of kwatha as a dose form in Ayurveda. It serves as a foundational dose form for a number of illnesses. As a medium, it is crucial to the processing of other medicinal products made by rasahastra. However, because kwatha has certain disadvantages, it must be modified into different dosage forms, such as ghana, rasakriya, churna, gutika, vatika, and pravahi kwath.These altered dosage forms perform a good job of improving palatability, extending shelf life, and making transportation simpler.

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