



PHARMACEUTICAL STANDARDIZATION OF PATHYADI KVATHA GRANULES

Heena Panchal^{1*}, Upendra U. Zala² and Rejoice Macwan³

PG Scholar¹, HOD & Guide², Co-Guide³
PG, Dept of RSBK, J .S Ayurveda Mahavidyalaya, Nadiad, Gujarat.

***Corresponding Author: Dr. Heena Panchal**

PG Scholar PG, Dept of RSBK, J .S Ayurveda Mahavidyalaya, Nadiad, Gujarat.

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ABSTRACT

Bhaishajya *kalpana* endorses *panchavidha kashay kalpana* –*swarasa, kalka, kvatha, hima, phanta*. Among all these dosage forms, *kvatha Kalpana* is the most significant and generally used dosage form. *kvatha* or *Kashayam* is the filtered decoction which is obtained after boiling of Herbal drugs in sixteen (16) times water and is reduced to its one eighth (1/8) volume. *kvatha* which must be consumed freshly as it has very short shelf-life is the major drawback for large scale production. It has also significantly less stability, and inconvenience faced as to prepare fresh *kvatha* whenever needed. The *kvatha* making process is prone to spilling and risk of contamination is also high. Keeping all these challenges in mind, significant modification or improvements needed to be done in traditional *kvatha Kalpana* to improve the overall stability, feasibility, and sustainability of the process without affecting the qualities and efficacy of *kvatha Kalpana*. For preparation of *pathyadi kvatha granules* *pathyadi kvatha* is further processed with *guda* (Jaggery). This *kvatha* is converted into Granules to make it palatable, increased shelf-life and easy to dispense.

KEYWORDS: *Kvatha, Pathyadi kvatha, Granules.*

INTRODUCTION

Bhaishajya Kalpana (Ayurvedic Herbal Pharmaceutics) endorses the five fundamental dosage forms Swarasa (Fresh Juice), Kalka (Herbal Paste), *kvatha* (Herbal Decoction), Hima (Cold Water Infusion) and Phanta (Hot Water Infusion).^[1] *kvatha* is the process in which water soluble and heat stable particles of hard and crude drugs are extracted out.^[2] Among them *kvatha kalpana* (Decoction) is important dosage form. It is one among basic *Panchavidha Kashaya Kalpana* (Five types of dosage forms) of Bhaishajya Kalpana (Pharmaceutical dosage). It is a basis of preparative method of other secondary dosage form such as Avaleha (Linctus), Snehapaka (Medicated oil and Ghrit), Sandhan kalpana (Alcoholic preparations) etc. *Pathyadi kvatha* is one of the well-known Classical Polyherbal Ayurvedic Formulation and widely used in Ayurvedic Clinical Practices and Treatments like, Shiraroga, Bhru-sankhakarnasula, Ardhavabhedaka, Suryavarta, Dantapita, Naktandhya.^[3]

The *kvatha* making process is prone to spilling and risk of contamination is also high. Keeping all these challenges in mind, significant modification or improvements needed to be done in traditional *kvatha Kalpana* to improve the overall stability, feasibility, and

sustainability of the process without affecting the qualities and efficacy of *kvatha Kalpana*. This *kvatha* is converted into Granules to make it convenient to handle, increased shelf-life and easy to dispense, storage. conversion of formulations into various dosage forms to achieve added benefits keeping intact the therapeutic properties has gained momentum in recent past that has great importance in the market.

AIMS AND OBJECTIVES

1. To convert *pathyadi kvatha* to its granular form i.e *pathyadi kvatha granules*.

MATERIALS AND METHODS

Procurement and preparation of plant material. The drugs which constitute for the preparation of the *pathyadi kvatha* was procured from Sundar ayurved pharmacy, Nadiad. All fine powder used to make *pathyadi kvatha* were properly identified and verified by going pharmacognosy of the material in department of Dravyaguna of J.S Ayurveda Mahavidyalaya. The drugs used in *Pathyadi Kvatha* with their botanical identities and parts used are given in table 1.

Table 1: Showing Ingredients and Quantity of *pathyadi kvatha*.

Ingredients	Botanical names	Part used	Quantity
Haritaki	<i>Terminalia Chebula</i>	Fr.p	1 part
Bibhitaki	<i>Terminalia Bellirica</i>	Fr.p	1 part
Amalaki	<i>Phyllanthus Emblica</i>	Fr.p	1 part
Bhunimba	<i>Andrographis Paniculata</i>	PL	1 part
Haridra	<i>Curcuma Longa</i>	RZ	1 part
Nimba	<i>Azadirachta Indica</i>	St.Bk	1 part
Guduchi	<i>Azadirachta Indica</i>	St.	1 part

*Fr. P = Fruit Pulp | PL = Plant Whole | RZ = Rhizome | St. Bk. = Stem Bark | St. = Stem.

Preparation of *pathyadi kvatha* granules

Pathyadi Kvatha is one of the well-known Classical Polyherbal Ayurvedic Formulation and widely used in Ayurvedic Clinical Practices and Treatments like, *Shiraroga*, *Bhru-sankhakarnasula*, *Ardhavabhedaka*, *Suryavarta*, *Dantapita*, *Naktandhya*.

पथ्याक्षधात्री भुनिम्बर्निशामृतायुतैः |

कृतः क्वाथः षडङ्गोअयं सगुडः शीर्षशूलहत् ||

(Sharangadhara-samhita, Madhyam khanda, 2/143)

Pathyadi kvatha preparation is divided into two,

1. Preparation of *Pathyadi Kvatha*
2. Preparation of *Pathyadi Kvatha* Granules.

1. Preparation of *pathyadi kvatha*

Principle: *Agni Samyoga*

Equipments: S. S. Vessel, weighing scale, gas stove, thermometer, tong, cotton cloth, measuring beaker

Procedure:

Yavakuta churna of *pathyadi kvatha* was taken in s.s vessel and soaked overnight in 16 times of portable water. The mixture was heated till 1/8th quantity of water remained. It was then filtered through a cotton cloth. This prepared *kvatha* was used for further process.

Precautions:

Table 2: Showing Ingredients used for PKG.

Ingredients	Botanical names	Quantity
Haritaki	<i>Terminalia Chebula</i>	1 part
Bibhitaki	<i>Terminalia Bellirica</i>	1 part
Amalaki	<i>Phyllanthus Emblica</i>	1 part
Bhunimba	<i>Andrographis Paniculata</i>	1 part
Haridra	<i>Curcuma Longa</i>	1 part
Nimba	<i>Azadirachta Indica</i>	1 part
Guduchi	<i>Azadirachta Indica</i>	1 part
Water	Potable water	16 part
Guda	Jaggery	1/4 th part of <i>kvatha</i>

Procedure:

As mentioned above *pathyadi kvatha* is prepared .After preparation of *kvatha* it is again subjected to mild heat. Then jaggery which is taken 1/4th of *kvatha* is subjected to it. paka is done till 2 or more than two thread like consistency is achieved after paka is achieved *pathyadi kvatha* ingredients churna (1/20th of *kvatha*) is mixed and

1. The all vessels washed properly before used.
2. Overnight soaking of yavakuta of *pathyadi kvatha* should be done
3. During boiling process liquid was frequently stirred to check frothing and liquid out of vessel.
4. Heating process was maintain below 100^oC

General observations during preparation:

The menstrum was light brown colour in the initial stage, which was gradually turned to dark brown in color. The maximum temperature during boiling stage was found in the liquid in between 90oC-95oC

OBSERVATIONS

1. *Pathyadi kvatha* ingredients was floating on the surface of water initially.
2. Frothing was appeared after 10 to11 minutes of boiling.
3. The light brown colour of mixture turned to dark brown at the end.
4. Characteristic smell of *pathyadi kvatha* was felt.

2. Preparation of *pathyadi kvatha* granules

Principle: *Agni Samyoga*

Equipments: S. S. Vessel, weighing scale, gas stove, thermometer, tong, cotton cloth, measuring beaker

proper mixing is done. Gas stove is then off. After that this mixture is subjected to dry in sunlight in the form of pallets. After the moisture is fully removed due to drying in sunlight the pallets are broken into smaller particles in khalva yantra. This then weighed and stored in air tight container.

Table 3: Showing quantity of Ingredients taken for PKG.

Sr. no.	Ingredients	Quantity
1	Pathyadi kvatha	280 g
2	Water	4500 ml
	Reduced to	560 ml
3	Guda	140g
4	Churna	28g

Precautions

1. Continuous stirring should be done in order to avoid sticking of material at bottom of vessel.
2. Throughout the procedure, mild heat should be maintained and the vessel should not be covered with lid.
3. Paka should be done till 2 or more than 2 thread consistency.

RESULT

Pathyadi kvatha yavakuta (280g) is soaked overnight in 4500ml of potable water. This is kept on mild heat and reduced to its 1/8th volume i.e 560ml. After that guda 140gm is added. when the paka of 2 or more than 2 thread consistency is achieved it becomes semisolid form. Later *pathyadi kvatha* churna 28g is added. After drying final product i.e *pathyadi kvatha* granules obtained is 173g.

Table 4: Organoleptic parameters of *pathyadi Kvatha* and *Pathyadi kvatha granules*.

Parameters	Kvatha	Granules
Colour	Dark brown	Dark brown
Taste	Bitter	Bitter
Odour	Characteristic	Characteristic
Form	Liquid	Solid

DISCUSSION

Ayurveda has given utmost importance to quality of drug, maturity of plant, season and time of collection, standard preparation methods, and its mode of usage in logical manner. *kvatha* kalpana has lost its utility due to its short shelf life, prone to spilling, loss of contamination and less stability. So this *kvatha* is converted into another dosage form, Granules. In making of granules generally sugar is used. But in this attempt is

made to use jiggery (guda) instead of sugar (sharkara). many pilot batches were made to make granules from jaggery. Modifications were done in this. After paka of 2 or more than two thread consistency is achieved it does not pass directly through sieve, as guda is sticky in nature. so first it is sun dried in form of pallets then after moisture is removed completely. Then it is converted into smaller particles in *khalva yantra*. Then it is weighted and stored in air tight container.

Diagrams:Fig. 1.1: Ingredient of *pathyadi kvatha*.Fig. 1.2: Boiling of *kvatha* in medium flame.Fig. 1.3: Finished product *pathyadi kvatha*.Fig. 1.4: Ingredients of *pathyadi kvatha* granules.

Fig. 1.5: Mixing of all ingredients on slow heat.

Fig. 1.6: Finished product PKG *Pathyadi kvatha* granules.

CONCLUSION

Pathyadi kvatha is a very popular, potent and widely practiced ayurvedic formulation used alone or as an Ghana,tablet.*pathyadi kvatha* granules is the innovation of 21st century pharmacists to ensure better acceptability of *kvatha kalpana* in terms of convenient dosage form and shelf life.Instant *kvatha* prepare form are more convenient in terms of dosage, maintenance the purity for preparation in fast moving lifestyle.

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