

**Standardization of Herbal Remedy-Musta Kwatha****Dr. P. U. Shinde**

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**Abstract:**

There are five basic Kalpans to prepare any final product medicine i.e. Swaras, Kalka, Kwatha, Hima, Fanta. According to Acharya Charaka, if we understand basic principles of Drug formulations, there is no need to know number of formulations, we can prepare it for treatment of various diseases.

Musta (Nagarmotha) is an effective and important formulation and important commonly use in digestive system disorders. Standardization of Ayurvedic drugs with the help of modern parameters is of prime importance today / a need of time.

It is used in dyspepsia, fever, blood disorders etc. So, Subject will help to prove standard quality assurance of Musta herbal drug.

keywords: Cyprus rotundus, kwatha, analytical tests, organoleptic tests.

Varidnamaka, Kuruvinda etc.

**Introduction:**

Although Musta can be a drug of choice to control various diseases, the pharmaceutical standardization aspects are still untouched. Now a days to prove Ayurveda in India as well as in world, there is very much need to standardization of drugs in modern aspects also. Musta is most important commonly required drug in practice of Ayurved in form of kwatha basic preparation. Preparation methods used in practical study taken as per references given in Sharangadhar Samhita Grantha. The present study done includes steps Raw material, Practical study, Observations and Results. From this detail study given in part of discussion and conclusions.

**Materials and Method:**

It includes steps :

1. Raw material
2. practical study
3. Observations and results.

1. Raw materials:

**Herbal Name - MUSTA**

- ❖ Family : Cyperaceae
  - ❖ Latin name : Cyperus rotundus Linn.
- Synonyms in Sanskrit : Must,

**Vernacular names :**

- ❖ English : Nut grass
- ❖ Gujarathi : Moth, Nagarmoth
- ❖ Hindi : Motha, Nagarmotha,
- ❖ Kannad : Tunge gadd
- ❖ Marathi : Moth, Nagarmoth

**Gana:**

Sanyashodhan (Ch.Su. 4/2), Lekhaniya (Ch.Su. 4/9), Triptighna (Ch.Su. 4/11), Kandughna (Ch.Su. 4/11), Trishna nigrahan (Ch.Su. 4/14). Vachadi (S. Su. 38/26), Mustadi (S.Su. 38/54).

**Habit (Swaroopa):** An erect glabrous very variable herb from few inches to 2 – 3 ft. in height. Stem bases usually thickened in a nodose manner, and passing below abruptly into a stiff rhizomes and covered with the more or less fibrous remains of the leaf sheaths. Leaves usually shorter than stem, linear tapering in the

- ❖ Part used (Upayuktanga) : Mula (Root - Rhizome – tubers)

**Description of part :**

Drug consists of rhizome and stolon having a number of wiry roots stolon 10 – 20 cm. long having a number of rhizomes, crowded together on the stolons, rhizomes bluntly conical and vary in size and thickness, crowned with remains of stem and leaves forming a scaly

covering dark brown or black externally, creamish yellow internally. Odour – pleasant

Measuring cylinder, Spatula, Wooden lid etc.

**Properties :**

- ❖ Rasa : Tikta, Katu, Kashaya
- ❖ Virya : Sheeta
- ❖ Vipaka : Katu
- ❖ Doshagnata : Kaphpitta Shamaka

**Chemical constituents :**

Volatile oil – 0.5 to 0.6%; Fat, Sugar, carbohydrates, albuminoids matter, starch.

**Varieties:**

Bhavprakasha Nighantu mentioned two varieties i.e.

1. Musta – Cyperus rotundus Linn.
2. Nagarmusta – Cyperus scariosus R.Br.

**Uses :**

- ❖ It has action of stimulant, carminative, diuretic and astringent.
- ❖ Part used (Upayuktanga) : Mula (Root - Rhizome ).

**Pharmacopoeia:**

1. Total Ash - Not more than 8%
2. Acid insoluble ash - Not more than 4%
3. Alcohol soluble extract - Not less than 5%
4. Water soluble extract - Not less than 11%

**Practical.study:** Preparation of Musta kwatha

**Method:**

Musta Yavkuta Churna was kept soaked in water for overnight. Next day it becomes soft. As Musta Yavkuta was not more hard, became soft after soaked in water also it is a volatile drug, so eight times of water was sufficient for it's Kwatha preparation. Method adopted was decided on basis of previously done pilot study. It was boiled on mild heat in Lohapatra. Water was slowly evaporated and reduced till quantity became 1/4th. It was filtered by a clean cotton cloth and solution was collected as Musta Kwatha.

**Precautions:**

1. It requires upto 98°C temperature to boil mixture for Kwatha preparation.

**Equipments:** Ardachandraakruti Khalvayantra, mesh, Weighing balance machine,

	Batch1	Batch2	Batch3
Must a Yavkuth	1kg.	1 Kg.	1kg.
Water.	8lit.	8lit.	8lit.

**3.Observations and Results:**

**Musta Kwatha:**

**Observations:**

- 1) Hard Musta Yavkuta Churna became soft when kept soaked for overnight.
- 2) It requires 98°C temperatures to boil the Musta containing water for each batch and duration of heat for water evaporation of Batch-I, Batch-II and Batch-III was 122min., 126 min.,120min. respectively.

**Organoleptic examinations:**

**Analytical tests:**

Table-: Tests of Musta Kwatha:

Test	I Batch	I Batch	I Batch	Me an	S.D.
Color	Brownish black	Brownish black	Brownish black		-
Taste	Kashaya Tikta	Kashaya Tikta	Kashaya Tikta	-	-
Odour	Pleasant	Pleasant	Pleasant	-	-
pH	6.80	6.84	6.83	6.82	0.0208
Specific gravity	1.028	1.030	1.034	1.030	0.0030

Sr.	Batch - I	Batch - II	Batch - III
1 Initial quantity of water taken.	8 lit.	8 lit.	8 lit.
2 Final quantity of Kwatha obtained	2 lit.	2lit.	2 lit.
3 Weight of Musta Yavakuta taken	1 kg	1 kg.	1kg.
4 Weight of residue	837gm.	812 gm	828 gm

**Results:**

Identification of sample\_Musta Rhizome-Cyprus rotundus Linn.

**Musta Kwatha:****Observations:**

- 1) Hard Musta Yavkuta Churna became soft when kept soaked for overnight.
- 2) It requires 98°C temperatures to boil the Musta containing water for each batch and duration of heat for water evaporation of Batch-I, Batch-II and Batch-III was 122min., 126 min., 120min. respectively.

**Discussions:**

Standardization means the bringing a formulation to a specified standard of quality so as to assure quality of final product. It would be logical to go to the standardization of raw materials and same of final product too. In this present study the standardization was carried out on the basis of Ayurvedic Panchabhautika Parikshana and analytical study. Rhizomes of Musta were dark brown to black in colour and creamish yellow internally. Rhizomes were crowded together on stolons bluntly conical and crowned with remains of stem and leaves. It has pleasant odour. Musta is medium hard drug, it requires more water to become soft, but eight times of water was sufficient for Musta Yavkuta and Musta is a volatile drug therefore taken eight times water for Musta. Softened Yavkuta facilitated better extraction. After soaking Musta Yavkuta in water, it was heated on mild fire to reduce it up to 1/4th quantity in order to extract the maximum water soluble extract from musta. It requires 98°C temperature to boil Musta containing water to prepare this Musta Kwatha. Prepared Kwatha was dark brownish black in colour having Kashaya, Tikta rasa (taste) and pleasant odour. Taste of kwatha can also provide the quality of prepared kwatha. More Kashaya, Tikta rasa (taste) represents the better preparation of kwatha. Colour is characteristic of better kwatha preparation, on contrary lighter colour signifies the lower extraction of water soluble parts. Its pH was  $6.82 \pm 0.0208$  (Mean  $\pm$  S.D.). The medium used for extraction was water with specific gravity equal to 1. So, specific gravity of Musta kwatha was expected to be more than 1. Specific

gravity of Musta kwatha observed was  $1.030 \pm 0.0030$  (Mean  $\pm$  S.D.). It is slightly more than 1 as expected.

**Conclusions:**

Now a day to prove Ayurveda in India as well as in World wide there is very much needs to maintain standard quality of formulation. So, it was decided to study on Standardization of Musta kwatha. Analytical tests carried out for this, are organoleptic characteristics, Loss on drying, Ash value, Acid insoluble ash, Average weight, Hardness, friability, Disintegration time, pH, Chemical analysis by XRF method.

This analytical data during standardization of formulation is necessary to ensure acceptable quality in form of identity and purity.

The whole work is elaborately discussed along with reasoning in .

\*Average specific gravity of Musta Kwatha used was  $1.030 \pm 0.0030$  (Mean  $\pm$  S.D.). Reduction in particle size i.e. fineness of medicine after proper Bhaavna samskara (requires time upto 8 hours) in khalvayantra helps in increasing bioavailability of drug.

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