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RASRUPANTARAN OF AMALAKI WITH TASTE THRESHOLD METHOD

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ABSTRACT

Amalaki is Rasayana and vayasthapan dravya used in many diseses and in many formations, here in this study we are studying the rasa of amalaki and change in Amalki when it is fresh, and dried under sun.

KEYWORDS: Amalaki, Rasa, Rasarupantarana.

INTRODUCTION

Ayurveda is way to live life; *Ayurveda* is defined as a system which uses the inherent principles of nature to maintain physical as well as mental state of person.

Dravyaguna is a branch of *Ayurveda* in which *Dravya, Guna, Rasa, Veerya, Vipak* and *Prabhav* are studied. These are fundamental principles of *Dravyaguna Vigyan*

Rasa is special sense known through the *Rasana* or *Rasnendriya* (tongue or taste buds). This is also called as property of *Dravya*.

Now days we know the importance of GCP and GMP. Many drugs of *Ayurveda* are of herbal origin and they are collected from field and further processed for formulations. In some formulations the raw drug used, is either fresh or in dried form. *Ayurveda* has mentioned collection, storage and processing of raw drugs in detail[4] *Charaka* described the collection methods of drug, according to him drug should not be affected by *Atapa, Agni, Jala, Vayu,*

Krumi, etc. In view of fresh drugs it is mentioned that they should not be exposed to direct sunlight as their properties get changed, which is called as *Rasarupantaran.*

Bhadant Nagarjuna explained the *Rasarupantaran,* according to him *Sthana, Samyoga, Agni, Bhavana, Desa, Kala, Parinam, Upsarg, Vikirya* and *Atapa* are the causes of *Rasarupantaran*. On exposure to these factors the properties of *Dravyas* i.e *Guna, Rasa, Veerya, Veepaka* undergo various changes formulations *Amalaki* is used in fresh form. The *Amalaki* is *Panchrasatmaka* i.e madhura, *Amla, Katu, TIkta, Kasaya* (except *Lavana*) in which *Amla* rasa is predominant. It has *Guru, Ruksha, Sheeta* and *Sara* property.

It is mentioned that On exposure to sunlight the taste of *Amalaki* will change. *Atpa* is one of the cause of *Rasrupantaran* of *Amalaki*. i.e the sourness of *Amalaki* reduces on drying in sunlight. Change in *Rasa* is ultimately the change in properties of *Dravyas*. So the effect of *Atapa* on *Amalaki Rasa* i.e change in properties of *Amalaki* will be observed.

AIM AND OBJECTIVES

AIM- *Pharmacognostic* and Phytochemical study of *Amalaki* with special reference to *Rasrupantaran.*

OBJECTIVES

1. To study the concept of *Rasrupantaran*
2. To review literature from *Ayurveda* as well as from modern texts
3. To evaluate the physical analysis of fresh fruit of *Amalaki,* fresh fruit of *Amalaki* exposed to sunlight for one hour, air dried *Amalaki*, sun dried *Amalaki*
4. To evaluate the chemical analysis of fresh fruit of *Amalaki,* fresh fruit of *Amalaki* exposed to sunlight for one hour, air dried *Amalaki*, sun dried *Amalaki.*
5. To evaluate the taste threshold analysis of fresh fruit of *Amalaki,* fresh fruit of *Amalaki* exposed to sunlight for one hour, sun dried *Amalaki*, air dried *Amalaki.*

5. MATERIAL AND METHADOLOGY

1 MATERIAL

Identification of sample of *Amalaki*

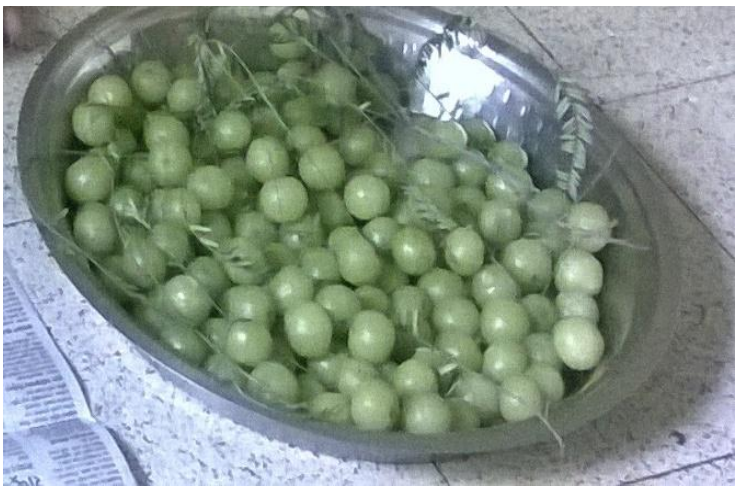
Identification of *Amalaki Fruit* was done by authentic source, then *Amalaki* was collected according to respective *kala*.

Collection of Sample

- Sample was self-collected from field by taking all required precaution.

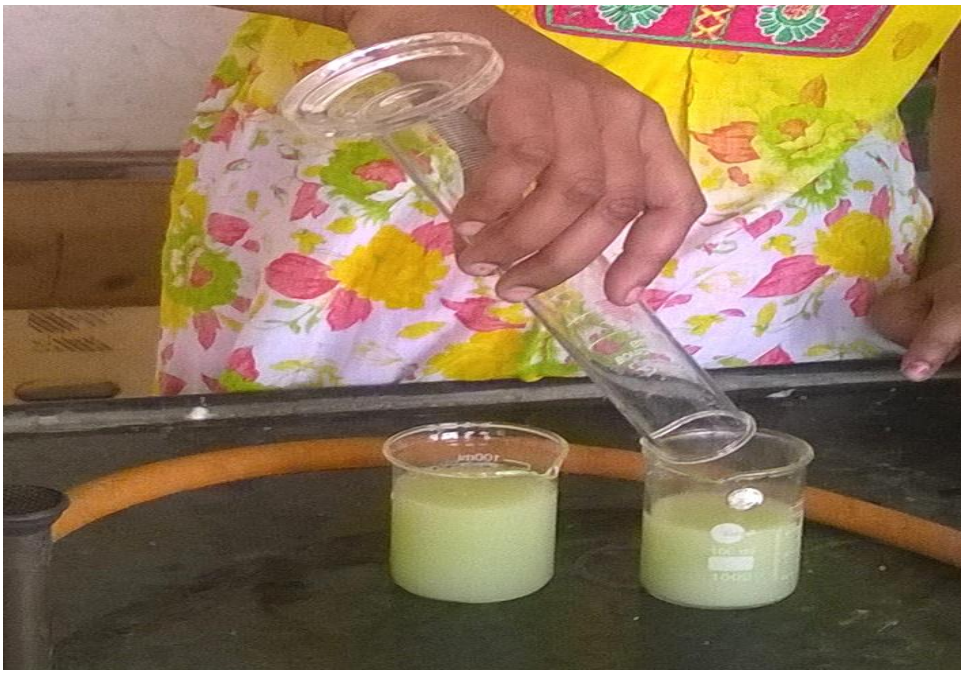
Preparation of Drug

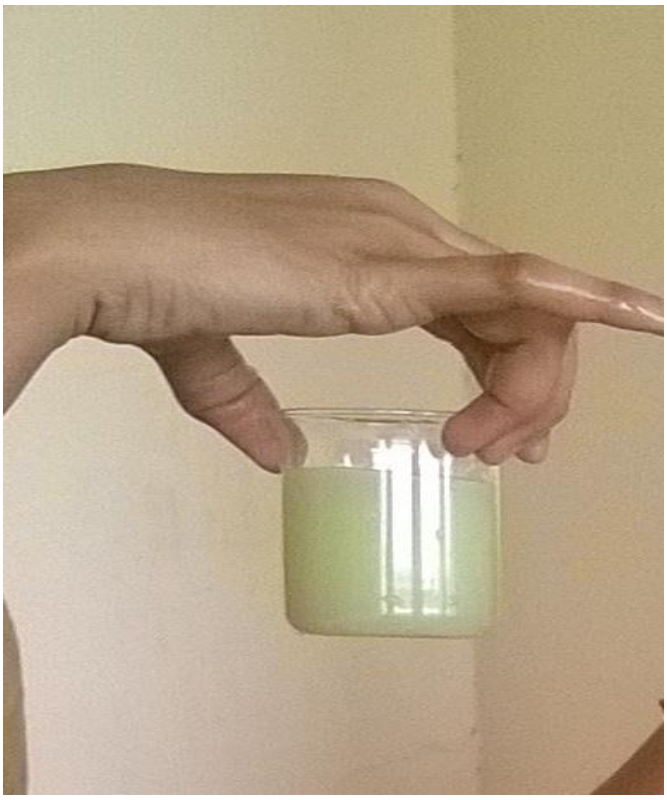
Around 300 *Amalaki* fruits were collected from feild and checked for earthly and forien matter, Undamaged and fully mature fruits are washed and cleaned by taking all precaution. Fresh fruits cut into pieces, out of them.



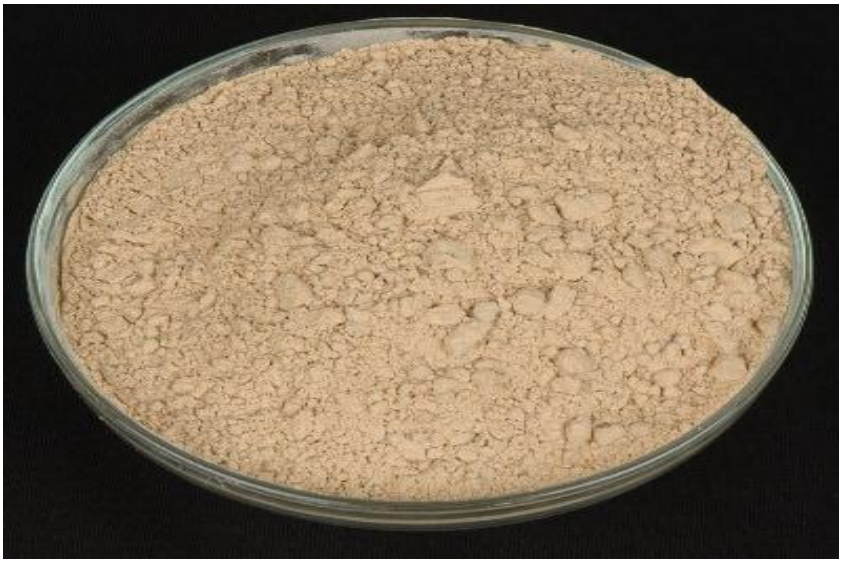
Sample A- Fresh fruit juice extracted by mixer griender, was filtered by filter paper and used to Analyse the phytochemical, physiochemical test, and for Taste threshold method to investigate *Rasa* of corresponding sample

Sample B- some Amalaki pieces were dried under sun for one hour, then juice extracted by mixer grinder was filtered by filter paper, this sample used for Analysis.





Sample C- some Amalaki pieces were allow to shade dry for 6 days, then complete Air dried fruit sample were made into fine powder of mesh size-120.



Sample D- some Amalaki pieces were allow to sun dry for 5 days and then complete sun dried sample were made into fine powder of mesh size 120. samples were collected at one time, in Falguna mansa.

2 METHODOLOGY

Ayurvedic system of medicine uses drug as a whole whereas the modern system of medicine has given much importance to the fractions of the drugs. In the present study, *Ayurvedic* parameters of *Dravya Parikshan* i.e *Panchabhautik Parikshan* and modern pharmacognostical and physicochemical methods were used.

a) Panchabhautik Parikshan / Organaleptic Study

According to *Ayurveda*, every *Dravya* is constituted of Five Mahabhootas viz. *Prithvi, Aap, Teja, Vayu And Akash.*

C) Physico-chemical analysis

Taste Threshold Method

Method of Testing: 5 gm of the powdered drug is mixed with 10 ml of distilled water and stirred.

They mix thoroughly. Then it filtered with the help of a filter paper. Afterwards one drop of the filtered solution applied over the tongue, distilled water added drop by drop until the taste on the tongue disappears. This particular point of disappearance of taste will indicate the 'taste threshold' of the given drug.

TASTE THRESHOLD

SAMPLE-1

Taken 5: readings at one time i.e for each x.

No	Reading
1x	2 Kashaya, 3 Amla
2x	2 Lavana, 1 Amla, 1Kashaya
3x	5 Kashaya
4x	1 Madhura, 4 Avyakt
5x	5 less Kashaya.
6x	5 Avyakt
7x	All Avyakt

The remaining liquid measured is 430ml

SAMPLE-2

No	Reading
1x	All Kashaya
2x	3 Kashaya, 2 Amla
3x	1 Amla, 4 Kashaya
4x	2 Kashaya, 2 Amla, 1 Avyakt
5x	3 Kashaya, 2 Tikta
6x	3 Avyakta, 2 Kashaya
7x	All Avyakt
8x	All Avyakt

The remaining liquid measured is 220ml

SAMPLE-3.

No	Readings
1x	All Kashaya
2x	1 Amla, 4 Kashaya
3x	2 Kashaya, 2 Madhur, 1 Amla
4x	1 Mixed Kashaya and Madhur, 1 Madhur, 3 Kashaya
5x	5 Kashaya
6x	4 Kashaya, 1 Amla, 1 Madhura
7x	1 Madhura, 4 Amla
8x	2 Madhura, 3 Amla
9x	1 Avyakt, 2 Madhura, 2 Amla
10x	2 Avyakt, 3 Madhura
11x	All Avyakt

The remaining liquid measured is 250ml

SAMPLE-4

No	Result
1x	4 Kashaya, 1 Amla
2x	5 Kashaya,
3x	1 Amla, 4 Kashaya
4x	4 Kashya, 1 Amla
5x	3 Amla, 2 Kashaya
6x	5 Amla
7x	5 Amla
8x	2 Madhura, 3 Amla
9x	5 Madhura
10x	1 Amla, 4 Madhura
11x	4 less Madhura, 1 Avykta
12x	4 Avyakta, 1 less Madhura
13x	All Madhura
14x	All Madhura
15x	All Madhura
16x	All Madhura
17x	5 Avyakta

The remaining liquid measured is 2200ml

6 OBSERVATIONS AND RESULTS

- *Panchabhoutik pariksha*
- Taste threshold Analysis

2. *Panchbhautik Parikshan* (Organoleptic study)

Parikshana	Sample-A	Sample-B	Sample-C	Sample-D
Shabda	-	-	-	-
Sparsha		-	Shlakshna	Shlakshna
Roopa	Haritabha	Tamrabha Harita	Tambrabh	Tambrabh
Rasa	Amla and Kashaya	Amla and Kashaya	Ishad Amla	Ishad Amla amd Madhura
Gandha	Vishesha	Vishesha	Vishesha	Vishesha

Organoleptic Study of Sample

Tests	Sample-A	Sample-B	Sample-C	Sample-D
Colour	Light green	Brownish green	Brown	Dark brown
Touch	Rough	Rough	-	-
Taste	Sour and astringent	Sour and astringent	Sourness decreases as compared to before	Very less sour ends in Sweet taste
Odour	Characterstic	Characterstic	Characterstic	Characterstic

Identification Of Rasa By Dilution Method And Determination Of Taste Threshold

Sample A: juice of fresh fruit of *Amalaki.*

Sample B: Juice of fresh *Amalaki* fruit exposed to sunlight for one hour.

For Sample A and Sample B, In 10 ml juice of *Amalaki* 100ml of distilled water were mixed. Kept for some time and then filtered by filter paper. And for Sample C and Sample D in 5gm of churna 100ml of distilled water added. Kept for some time and then filtered by filter paper. Randomised selection of 10 candidates done for observation of Taste threshold for each four sample. taste experienced by candidate was noted.

After that 10ml of water was added in 100ml of *Amalaki* (which was prepared previously) everytime and the mixture was given to candidates for taste.

In Sample A, taste experienced by candidates was mostly of *Amla* and *Kashaya rasa* in first undiluted sample. then 10 ml distilled water was added in every dilution and then taste was observed in 10 subject.at 550ml taste disappear. which was taste threshold for the sample A. During experiment only *Kashaya* and *Amla* rasa were observed.

In Sample B taste experienced by candidates was mostly of *Amla* and *Kashaya rasa* in first undiluted sample. then 10 ml distilled water was added in every dilution and then taste was observed in 10 subject.at 650ml taste disappear. which was taste threshold for the sample A. During experiment.

In Sample C, taste experienced by candidates was mostly of *Amla* and *Kashaya rasa* in first undiluted sample. then 10 ml distilled water was added in every dilution and then taste was observed in 10 subject. at 450ml taste disappear. which was taste threshold for the sample A. During experiment only *Kashaya* and *Amla* rasa were observed.

In Sample D, taste experienced by candidates was mostly of *Amla* and *Kashaya* rasa in first undiluted sample. 10 ml distilled water was added in every dilution and then taste was observed in 10 subjects. At the middle of sample it becomes of Madhura rasa after adding 10ml of distilled water every time. At the 1000ml OF sample, The last diluted subject was 2200 ml which was taste threshold for the sample and it was observed that the taste was *Amla*, K*ashaya* and of *Madhura* R*asa*.

7. DISCUSSION

All the four samples were collected at a one time, some fruits allow to dry under sunlight for one hour, some fruits dried under shade, and some fruits dried under sunlight. organoleptic charachers noted according to respective drying process.

Experimental Study

Organoleptic Methods methods play an important role in the identification of the drug. The entire four samples show same organoleptic and Panchabhautik parikshana.

In taste threshold method i.e identification of rasa by dilution method. It is observed that in Sample A, Sample B, SampleC there was presence of Amla and Kashaya rasa seen. In Sample D, taste experienced by candidates was Amla, Kashaya rasa previously, when sample quantity was become 1000ml the candidates experienced Madhura rasa. As 10ml distilled water was mixed every time at 1500ml, Amla rasa, Kashaya rasa and at the 2000ml Madhura rasa experienced by candidates was reduced. The sample becomes tastless at 2200ml. Hence the rasa of sample D was Madhura, and other sample was Amla is considered.

9. CONCLUSION

Following can be concluded from the study

-The concept of *Rasarupantaran* is the expertise of *Ayurveda* and is established as the one of the foremost principles.

-Taste Threshold method reveals that on exposure to sunlight Rasrupantaran of Amalaki takes place. on exposure to sunlight Sourness of Amalaki reduces, and taste becomes Madhur-tara.

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