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BUREAU OF INDIAN STANDARDS

DRAFT FOR COMMENTS ONLY

भारतीय मानक मसौदा

हर्बल मैटीरियल में रस (स्वाद) के मूल्यांकन के लिए सामान्य दिशानिर्देश (भाग 1): संवेदी विश्लेषण

Draft Indian Standard

General Guidelines for Evaluation of *Rasa* (Taste) in Herbal Material (Part 1): Sensory Analysis

ICS 11.120.10

Ayurveda Sectional Committee, AYD 01 **Last Date of Comments: 29 June 2025**

FOREWORD

(*Formal Clause would be added later*)

The foundation of Ayurveda is based on the *Tridosha* (*Vata*, *Pitta*, and *Kapha*) hypothesis and to maintain their equilibrium state. When food or drugs are consumed, they interact with the body and affects the *Tridosha* in either positive or negative manner. In Ayurveda the therapeutic capacity of food or drugs depends on *Rasa* (taste), *Guna* (attribute/ property), *Virya* (potency), *Vipaka* (taste of a substance after undergoing complete digestion and transformation) and *Prabhava (*Unique therapeutic action) termed as *Pachagunas* or *Panchapadarthas*.

Knowledge percieved through *Rasanendriya*, or roughly gustatory feeling, situated at *Jihva* (tongue), is referred to as *Rasa*. The point at which a substance has a substantial chemical interaction with the body is known as *Rasanendriya*.

In Ayurveda, the primary method for evaluating and figuring out a substance's pharmacological characteristics and how it affects the body is its *Rasa (*taste). Similar *Rasa* denotes comparable structure and, as a result, comparable pharmacological action. *Rasa* can therefore be used as a scientific tool to narrow and concentrate the target areas during the drug discovery process.

Identification of *Rasa* helps to infer other attributes like *Guna, Virya, Vipaka* and *Karma* (pharmacological activity). Taste assessment using sensory method is apparently a basic and simple test. However, it is essentially a subjective assessment which has considerable uncertainty. Therefore, a standardized method for assessment of *Rasa* is important.

The standard is one of the series of standards being brought out on testing methods of substances used in traditional medicine for the advantage of researchers, academicians, students, clinical practitioners and drug manufacturers.

In the formulation of this standard inputs have been derived from the information available in the public domain in print and electronic media including authoritative books.

Draft Indian Standard

GENERAL GUIDELINES FOR EVALUATION OF *RASA* (TASTE) IN HERBAL MATERIAL (PART 1): SENSORY ANALYSIS

1 SCOPE

This standard provides general guidelines for sensory assessment of *Rasa* (Taste) of herbal materials which can be evaluated by taste sensation. This standard is applicable to herbal materials intended for oral use, having credible and unequivocal safety data, and is not applicable to materials with reported toxicity.

2 REFERENCES

The standard listed below contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the edition indicated were valid. The standard is subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of this standard.

ISO 8589: 2007	Sensory analysis — General guidance for the design of test rooms

3 DEFINITIONS

3.1 Sensory profile
Description of the sensory properties of a sample by means of sensory attributes.

3.2 Rasa
Elemental character responsible for taste of a substance. *Madhura* (Sweet), *Amla* (Sour), *Lavana* (Salty), *Katu* (Pungent), *Tikta* (Bitter) and *Kashaya* (Astringent) are the six tastes according to Ayurveda.

3.3 Anurasa
The secondary taste of a substance or the taste that is perceived after a short period of time.

3.4 Rasa Nirdharana
Method of assessing taste of a substance.

4 GENERAL TEST CONDITIONS

4.1 Testing Requirements

The compliance of following requirement should be ensured:

a) The test room requirements should comply with the conditions specified in Clause 5 of ISO 8589.

b) The room temperature should not exceed 25 °C.

c) Volunteers should be provided with a comfortable seating arrangement.

d) Volunteers should have light food at least two hours prior to the experiment.

e) Ethical clearance from the competent authority should be obtained before commencing the evaluation.

f) The study should preferably be double-blind or at least single blind.

4.2 Trial Drug

The trial drug should be evaluated with focus on the following aspects:

a) The evaluation should be done as early as possible from the time of collection and within the designated shelf-life period.

b) The investigators should ensure the authenticity and quality of the sample before proceeding with the evaluation.

c) The taste should be evaluated using the fine powder (passed through an 80 size sieve) and/or fresh juice (sieved through a fine cloth).

d) The dose for evaluation should be based on the documented human dose or calculated from the safe dose for animals. In any case, the dose should not exceed 5 g for powder samples or 5 ml for fresh juice.

e) The passport data of the sample should be maintained in the format provided in Annex A.

4.3 Volunteer

The volunteers included in the evaluation should meet the following requirements:

a) Volunteers should be at least 18 years of age, and individuals of any gender may participate.

b) Only apparently healthy volunteers should take part in this evaluation process. Special care should be taken to ensure that volunteers do not have any clinical conditions that may interfere with taste perception.

c) Only individuals who have completed or are currently pursuing a degree in Ayurveda should be included as volunteer for the evaluation.

d) Written consent should be obtained from all volunteers.

e) Volunteers should receive a demonstration or training on the entire evaluation process.

f) The minimum sample size for one evaluation should be 10 volunteers.

4.4 Preliminary Discussion

A brief training or orientation session should be conducted to familiarize the volunteers with the procedure, ensuring they understand what needs to be observed and documented.

5 METHODOLOGY

5.1 Volunteers should be provided with a standard mouth cleanser and distilled water for rinsing the mouth.

5.2 The test drug should be administered orally, and volunteers should be instructed to retain it on the tongue for thirty seconds before swallowing to ensure uniform contact with the taste buds.

5.3 Each volunteer should complete the Proforma given in Annex B which consists two parts. Part A involves the indirect assessment of *Rasa*, while Part B involves the direct assessment of *Rasa*. Volunteers should complete both parts of the Proforma. Part B should be filled only after completing Part A.

6 DATA INTERPRETATION

6.1 The responses of volunteers to the questions in Part A of Annex B should be assigned scores corresponding to their associated *Rasa*.

6.2 These scores should be analyzed for statistical significance to determine the *Rasa*.

6.3 The response to Question 5 in Part B should be tested for statistical significance to primarily identify the *Rasa* of the substance and its intensity. For example, if the statistically significant response of all volunteers indicates *Madhura – 2*, this should be assumed as the primary *Rasa* of the substance.

6.4 The findings from Question 5 should be validated against the collective responses from Part A.

6.5 In the case of significant discrepancies, the test should be repeated with a larger sample size to resolve the issue. Ideally, the findings from Part A and Part B should corroborate each other.

6.6 The responses to Questions 6 and 7 should be statistically analyzed and designated as the *Anurasa* of the substance.

7 STUDY REPORT

The study report should include the following information:

a) Name of the institute/laboratory which performed the study, names of the panel leader and study supervisor;
b) Date(s), time of test(s) and duration of session
c) Operating conditions of the study (including any conditions differing from the recommendations)
d) Results with statistical analysis and appropriate representations (graphs, diagrams etc.)

If agreed with the partner/sponsor, the content of the report may be less exhaustive.

ANNEX A

(*Clause* 4.2.5)

PASSPORT DATA OF THE SAMPLE

A-1 TEST SAMPLE NAME/ CODE

Botanical name / local name of test sample and the test sample code for blinding purpose.

A-2 SOURCE OF SAMPLE

Source of sample, if it is self collected (by any team member of investigating team) or procured from the market or collected from the third party. If it is provided by the third party and primary source is not known, then the third party will be considered as source. Write "Not Specified", if the sample is procured from the market and its source is not known.

A-3 COLLECTOR'S NAME

Write down the name of collector (any member of investigating team).

A-4 DATE OF COLLECTION

Mention the date (DD-MM-YYYY) of collection.

A-5 SEASON OF COLLECTION

Specify the season of collection.

a) Shishir/ Vasant/ Grishma/ Varsha/ Sharad/ Hemant
b) Spring/ Autumn/ Summer/ Winter /Rainy

A-6 COLLECTED PART

Mention clearly the part used of the plant source.

A-7 AUTHENTICATION NUMBER/AUTHENTICATING BODY

Provide drug accession number or drug identification certificate number provided by the Institute/organization working in the field of identification of medicinal plants, well equipped with taxonomist, botanist and chemist. Attach a copy of the same.

A-8 WEIGHT OF SAMPLE RECEIVED

Weigh the test sample with digital weighing scale having accuracy of 0.01gm. Minimum amount of the test sample needed should be calculated according to the number of participants. It should not be less than 5gm for each volunteer.

A-9 POWDER FINENESS (in case of powdered drug)

The sample should not be of more than 80 mesh sieve.

A-10 QUALITY ASSESSMENT TESTS

The sample should be tested for following quality parameters as per the standard protocol provided in the book entitled Quality Standards of ASU drugs provided by Pharmacopoeial

Laboratory of Indian Medicine or available BIS Standards on herbal materials for use in Traditional medicine.

A-10.1 Pharmacognostic study of the test sample (crude drug and powder) covering macroscopic and microscopic study.

A-10.2 Physicochemical parameters like foreign matter, loss on drying, total ash value, acid insoluble ash, water extractive value, alcohol extractive value, preliminary phytochemical analysis

A-11 SAFETY AND TOXICITY STUDY- YES / NO.

Attach the summary of published safety data along with their references in the records.

ANNEX B

(*Clause* 5.3)

STANDARD PROTOCOL FOR DETERMINATION OF RASA (TASTE) INVOLVING HUMAN SUBJECTS

Name of the Volunteer:

Age:

Date:

PART – A

(Mark one or more options)

1. What did you feel in the oral cavity after tasting the sample?

Sl No	**Question**	***Uttama*** (Highest degree) Score - 3	***Madhyama*** (Medium Degree) Score - 2	***Avara*** (Lowest Degree) Score - 1
1.	Coating of the oral cavity			
2.	Unctuous/Slimy feeling			
3.	Softness of the mouth			
4.	Cleansing of mouth			
5.	Burning sensation in mouth, throat, chest - After sometime			
6.	Softness of the mouth			
7.	Disperse quickly			
8.	Burning sensation in mouth, forehead			
9.	Burning sensation in mouth, forehead, whole body – immediate			
10.	Pricking sensation on tongue			
11.	Cleansing of mouth			
12.	Feeling of temporary loss of taste perception			
13.	Not pleasant to tongue			
14.	Cleansing of mouth			
15.	Dryness of mouth			
16.	Stiffness of the tongue			

2. What did you feel after tasting the sample?

Sl No	Question	***Uttama*** (Highest degree) Score - 3	***Madhyama*** (Medium Degree) Score - 2	***Avara*** (Lowest Degree) Score - 1
1.	Sense of satisfaction			
2.	Pleasant feeling			
3.	Developed a liking for food			
4.	Mental agitation			

3. Which kind of effect you are experiencing?

Sl No	Question	***Uttama*** (Highest degree) Score - 3	***Madhyama*** (Medium Degree) Score - 2	***Avara*** (Lowest Degree) Score - 1
1.	Perspiration / Sweating			
2.	Discharge from nose			
3.	Lacrimation / Tears in eyes			
4.	Stiffness of head			
5.	Choking feeling in throat / chest region			

4. What reflective effect you observed?

Sl No	Question	***Uttama*** (Highest degree) Score - 3	***Madhyama*** (Medium Degree) Score - 2	***Avara*** (Lowest Degree) Score - 1
1.	Increased salivation			
2.	Tingling sensation in teeth			
3.	Eye and eyebrow constriction			
4.	Feeling of goosebumps			

PART - B

5. What is the predominant taste of drug/ which taste you felt the most after immediate contact? (Mark only one)

Sl No	Option	*Uttama* (Highest degree) Score - 3	*Madhyama* (Medium Degree) Score - 2	*Avara* (Lowest Degree) Score - 1
1.	*Madhura*			
2.	*Amla*			
3.	*Lavana*			
4.	*Katu*			
5.	*Tikta*			
6.	*Kashaya*			

6. What is the secondary taste of drug/ which taste you felt after some time of contact? (Mark only one)

a. *Madhura*– Sweet
b. *Amla* – Sour
c. *Lavana*- Salt
d. *Katu* - Pungent
e. *Tikta* - Bitter
f. *Kashaya*- Astringent
g. None.

7. Any other taste(s) felt besides the above two? (Mark all applicable options)

a. *Madhura*– Sweet
b. *Amla* – Sour
c. *Lavana*- Salt
d. *Katu* - Pungent
e. *Tikta* - Bitter
f. *Kashaya*- Astringent
g. None.