



# SCA Standard 104-2024

**Coffee Value Assessment:**  
Affective Assessment

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# Coffee Value Assessment: Affective Assessment

## 1 Preface

Specialty coffee (see definition in 4.1) acquires value because of its attributes, whether intrinsic (related to the material reality of a coffee) or extrinsic attributes (the informational or symbolic attributes of coffee). Sensory attributes, or the sensory perceptions of coffee or coffee experience, are a special class of a coffee's intrinsic attributes because of their relevance to consumers and the specific methodologies required for their measurements. Sensory attributes are gathered and interpreted through sensory methodologies.

One of such sensory methodologies is the affective assessment, or impression of quality assessment, which focuses on discovering the impression of quality of a coffee, for the various sections of the coffee cupping and as an overall. It responds to questions such as "how much do I like this coffee?" and "does this sensory profile match the preferences of a market segment known to me?". In this assessment, users record subjective information about a taster's impression of quality or preferences. For each cupping section, tasters apply a 9-point scale to reflect either their own preference or a well-known market preference. They then score their impression of quality for the coffee "overall." This assessment is also used to record non-uniform cups and cups with sensory defects. Completing the affective assessment results in an impression of quality score for each cupping section; these ratings are then translated to a score.

The affective assessment presented within this standard uses the cupping method (described in *SCA Standard 102 Coffee Value Assessment: Sample Preparation and Tasting Mechanics*) and serves the same purpose as the 2004 SCA Cupping Protocol: to rate a cupper's impression of quality for a given coffee and express it in the form of a total score.

**This standard supersedes the following Heritage SCA Standards:**

- SCA Cupping Protocol (2004)

## 2 Scope

This standard has been designed for the affective assessment of green arabica coffee, prepared and tasted under the methods in *SCA Standard 102-2024 Coffee Value Assessment: Sample Preparation and Tasting Mechanics*, and assessed in conjunction with the methods in other standards of this series, such as *SCA Standard 103-2024 Coffee Value Assessment: Descriptive Assessment* and other standards in preparation (see section 3). This standard may be adapted for the assessment of coffee in stages other than green coffee, though that implies the cupping method might not be applicable, and some of the cupping sections, such as fragrance and/or aroma, may have to be omitted. Those adaptations are not described here.

The statistical data analysis methods required to interpret the affective assessment data with confidence are outside the scope of this standard.

Tasters' selection, training, and qualifications are outside the scope of this standard.

## 3 Normative References

*SCA Standard 102-2024 Coffee Value Assessment: Sample Preparation and Tasting Mechanics*

*SCA Standard 103-2024 Coffee Value Assessment: Descriptive Assessment*

*SCA Standard 610 Coffee Value Assessment: System Operation*  
(in preparation)

## 4 Terms and Definitions

### 4.1 General Terms

**Attribute(s).** A property that is characteristic of something; a quality or feature regarded as a characteristic or inherent part of a coffee. A product (or coffee) can be thought of as a collection of attributes. Well-defined attributes can be identified using a variety of methods.

**Affective assessment.** A sensory assessment, described in this standard, which focuses on discovering the “impression of quality” of a coffee (see below).

**Descriptive assessment.** A sensory assessment, described in *SCA Standard 103-2024 Coffee Value Assessment: Descriptive Assessment*, which focuses on profiling and characterizing the sensory attributes of coffee objectively.

**Specialty coffee.** A coffee or coffee experience that is recognized for its distinctive attributes and, because of these attributes, has significant extra value in the marketplace.

**Tasting.** A general term meaning the sensory assessment of a product using all senses but specifically involving the senses of smell and taste. In coffee, the term “tasting” encompasses cupping and other forms of tasting, such as tasting coffee from a batch brew.

### 4.2 Tasting and Sensory Terms

**Cupping.** A method for the sensory assessment of coffee, which involves tasting several cups per coffee sample, using a different set of coffee beans for each cup, which is ground and brewed independently. The purpose of a cupping may be to do a descriptive assessment or an affective assessment.

**Cupping score.** A numerical indicator of a coffee's compound impression of quality for a specific taster. The score is the result of a linear equation that takes into account the affective results from all cupping sections, and the numbers of non-uniform and defective cups, to produce a total that equals 100 when all sections score at 9 and equals 79 when all sections score at 5 (assuming all cups are uniform and non-defective).

**Gustative/Gustatory.** Referring to the sense of taste, just as “visual” refers to the sense of sight and “olfactory” to the sense of smell. The main physiological structure of the sense of taste is the set of tastebuds.

**Impression of quality.** A coffee taster's opinion of the distinctiveness and desirability of a coffee cupping section (see 4.3), reflecting either their own preference or a known market preference. See 5.2.

**Olfactive/Olfactory.** Relating to the sense of smell. The human olfactory system consists of the nose, the nasal cavities, and the olfactory bulb in the brain, which processes information from the olfactory receptors lining the nasal cavities.

**Orthonasal.** One of two entryways of odor molecules into the human olfactory epithelium, the orthonasal passageway is through the nose, as we breathe in, and is how we pick up the odor from the environment.

**Retronasal.** One of two entryways of odor molecules into the human olfactory epithelium, the retronasal passageway is from the back of the mouth cavity, as we breathe out, and is how we pick up the olfactory component of flavor.

**Sensory defect:** An olfactory or gustatory property of the coffee that is broadly seen as negative.

**Tactile.** Referring to the sense of touch. In this case, it refers to the “mouthfeel” or tactile sensations within the mouth in response to the coffee stimulus: thickness (viscosity), texture, pungency, etc.

### 4.3 Cupping Sections

Cupping sections are aspects of the coffee tasting experience. These aspects are split into parts, either along time or based on the different sensory modalities involved, for the purpose of analysis.

**Fragrance.** The orthonasal olfactory perception of the coffee grounds prior to brewing, (i.e., the smell of the coffee grounds).

**Aroma.** The orthonasal olfactory perception of the coffee brew, assessed at two moments: right after brewing and while the crust is broken (i.e., the smell of the brew).

**Flavor.** The perception coming from both the taste of the brew and the brew's retronasal olfactory component, while the brew is in the mouth. It is perceived as a single “flavor” impression, as the brain combines the different sensory inputs.

**Aftertaste.** The perception coming from both the taste and the retronasal olfactory component caused by the remnants of the brew inside the mouth and throat, after the brew has been ejected or swallowed. It is perceived as a single impression, as the brain combines the different sensory inputs.

**Acidity.** The perception of sour taste provoked by the brew, which may vary in intensity and character.

**Sweetness.** The perception of gustatory or retronasal sweetness provoked by the brew.

**Mouthfeel.** The tactile perception of the brew while it is in the mouth, excluding the temperature perception. It encompasses the brew's thickness (viscosity), its texture, and other tactile properties such as astringency (mouth-drying).

**Overall.** The general impression of quality of a coffee, including aspects not covered in the other sections, such as balance and personal preference. It is assessed at the end of a cupping, to account for the whole tasting experience.

**Uniformity.** The number of non-uniform cups (out of 5) presented by a coffee sample; this is an indicator of the coffee lot's homogeneity.

**Defect.** See *sensory defect* in 4.2.

5 The Affective Assessment

5.1 Overview

The Affective Assessment follows the cupping method, with the steps outlined in *SCA Standard 102-2024 Coffee Value Assessment: Sample Preparation and Tasting Mechanics*. Refer to that standard for the general procedures to prepare a sample and taste a coffee.

- a. In the first step of the assessment, fragrance shall be assessed, and its impression of quality rated.
- b. In the second step, the coffee shall be brewed, aroma assessed, and its impression of quality rated.
- c. In the third step, the brew shall be liquored several times, during which the remaining sections shall be assessed. The impression of quality of flavor, aftertaste, acidity, sweetness, mouthfeel, and overall shall be rated. In all these sections, tasters may take notes to better justify and explain their scores. The number of non-uniform cups and the number of defective cups, as well as the nature of the defect, shall be recorded.

5.2 Impression of Quality and the 9-Point Affective Scale

The evaluation of the impression of quality (see definition in 4.2) is an *affective* test. This means impression of quality is based on the *subjective* experience of human subjects. It implies a judgement of good or bad, "high quality", or "low quality." These preferences, when applied to coffee, reflect a complex set of personal responses. Some of these responses are natural and others are cultural. Because it is an affective measure, impression of quality is expected to be somewhat diverse. However, impressions of quality from different people may tend to converge when they share similar cultures, criteria, or liking patterns. In certain contexts, such as within a supply chain, the impression of quality from different tasters along the

chain may converge. This is known as "alignment," and may be either desirable or undesirable depending on the context; this standard considers alignment neither positive nor negative.

The 9-point scale shall be used to measure impression of quality. The center point of the 9-point scale is the number 5, which reflects "neither high nor low impression of quality": a neutral assessment of a sensory attribute's desirability. Numbers lower than 5 reflect an intensifying dislike (low impression of quality), the number 1 being an "Extremely low impression of quality." Numbers higher than 5 reflect an increasing positive impression of the coffee, with 9 being "Extremely high impression of quality" (Figure 1). The output from 9-point scales shall be converted to a score (section 5.5).

Figure 1: "Impression of Quality" rubric for the 9-point scale used in the affective assessment.

IMPRESSION OF QUALITY	
① EXTREMELY LOW	⑥ SLIGHTLY HIGH
② VERY LOW	⑦ MODERATELY HIGH
③ MODERATELY LOW	⑧ VERY HIGH
④ SLIGHTLY LOW	⑨ EXTREMELY HIGH
⑤ NEITHER HIGH NOR LOW	

The cupper's impression of quality of each section shall be rated by filling the corresponding bubble in the form (Figure 2). If the impression of quality shifted as the coffee cooled down, a second bubble should be filled, signaling the direction of change with an arrow. At any rate, if more than one bubble has been filled in a section, the "final" impression of quality shall be written in the "final" box at the end of each row, to express the final rating after the changes.

Figure 2: "Fragrance" and "Aroma" section on the affective assessment. A cupper shall rate their impression of quality by filling in the corresponding bubbles, with the option to note their "final" impression of quality over time in the "final" bubble at the end of the row. Note the space for affective notes below the scales.

Fragrance	①	②	③	④	⑤	⑥	⑦	⑧	⑨	FINAL
Aroma	①	②	③	④	⑤	⑥	⑦	⑧	⑨	FINAL
Notes										

Because impression of quality is based on affective responses to specific coffee attributes, it is a subjective measure. However, a coffee taster may be reflecting not only their own taste preferences, but taste preferences of others for whom they might be acting as a buyer or appraiser. For example, a cupper might personally dislike earthy-tasting coffees, but recognize that certain consumer segments prize this flavor and value it highly. A cupper therefore might learn to recognize certain sensory attributes as ones that others value, which is why there is a reference to “a known market preference” in the definition. Thus, an assessor might be able to, through learning and study, recognize flavors that are desirable to others.

Tasters should take care to assess coffee honestly and thoughtfully, but they should also use the impression of quality scale intuitively. Their assessment of a particular coffee should reflect either their own preference or a well-known market preference, but it should *not* be influenced by other cuppers in a group setting.

### 5.3 Affective Note Taking

If a Descriptive Assessment has been completed for a given coffee, there is no need to repeat the descriptive notes in the affective assessment—those would not be affective notes but descriptive notes. Affective note taking should instead reflect a judgement about the coffee's impression of quality and how it results from sensory characteristics. Affective note taking serves as a justification of a section's score. While descriptive note taking should be objective, the purpose of affective note taking is to justify the impression of quality—to explain a subjective judgement.

## 5.4 Defects and Uniformity

### 5.4.1 Defects

Distinct from physical defects, sensory defects (see definition in 4.2) are specific sensory attributes thought to be broadly undesirable. In practical terms, this limits the options for sensory defects to potato, moldy, and phenolic, with the latter having a wide range of expression.

Sensory attributes considered “defects” by the cupper shall be identified as specifically as possible. Before an “undesirable flavor” is penalized as defective, the cupper shall be clear that the “undesirable flavor” is indeed a defect and should be able to specifically identify such flavor as one of the options listed on the form, avoiding catch-all terms.

Whenever a defect is found in one or more of the cupping cups, two fields shall be filled out: the

defective cups and the defect type (potato, moldy, or phenolic). If any of these two fields are not properly filled out, the coffee shall not be counted as defective. In the “number of cups” field, the cupper shall mark the boxes corresponding to the cups where a defect is present. For example, if a defect is found in cups #1 and #5, the first and fifth boxes shall be marked. Finally, the type of the defect shall be clearly identified from the “defect type” options.

### 5.4.2 Uniformity

The uniformity box is a small discriminative test embedded in the affective form. Uniformity is an advantage given by cupping methods (in which each cup is ground independently), which serves as an indication of the lot's uniformity.

Sometimes, there may be brewing errors that impact the intensity of a coffee's sensory attributes. Those errors are human, and a coffee's uniformity rating should not be affected by such errors. For that reason, *quantitative* differences among cups, in which the same attributes are perceived at higher or lower intensity, should not be penalized. All non-uniform cups accounted for in the form shall represent *qualitative* differences among the cups, in which a distinctly different characteristic is either present or absent in one or more cups. Whether or not such a different characteristic is considered more desirable or undesirable than the rest of the cups, the fact that it is qualitatively different is enough to mark that cup as non-uniform.

The boxes marked as non-uniform in the form shall correspond to the physical cups. For example, if a qualitatively different characteristic is found in cups #1 and #5, the first and fifth boxes shall be marked.

There should be coherence between the cups marked for uniformity and those marked for defects. Though non-uniform cups do not have to be marked as defective, all defective cups shall be also marked as non-uniform, with the sole exception of evenly defective coffees across all cups.



### 5.5 The Cupping Score

The cupping score (see definition in 4.2) is a numerical indicator of a coffee's compound impression of quality for a specific taster. It is calculated using the following equation, rounded to the nearest 0.25 points:

$$S = 0.65625 \sum_{i=1}^{i=8} h_i + 52.75 - 2u - 4d$$

Where:

$S$  is the cupping score prior to rounding

$h_i$  is the 9-point score of each affective section, from  $i = 1$  (fragrance) to  $i = 8$  (overall)

$u$  is the number of non-uniform cups

$d$  is the number of defective cups

This formula is easily calculated using a cupping platform, a cupping app, a spreadsheet, or a special cupping score calculator. Whenever access to computing tools is not possible or is impractical, a two-way table may be used to calculate the final score from the sum of all scores (the  $\Sigma$  in the above formula)—this table is found in Appendix 7.1.

### 6 Recording the Assessment Results

The use of a cupping app or cupping platform, specifically designed for the Coffee Value Assessment data structure, is recommended. In cases where the use of a CVA cupping platform is not practical or is unavailable, tasters should use the form in 7.1..

## 7 Appendices (Informative)

### 7.1 Two-Way Table to Calculate Score

**Instructions:** Add up all the affective sections in the form (from the eight 9-point scales; totals in column A). Look up the corresponding score in column B. Deduct 2 points per non-uniform cup and 4 points per defective cup.

A	B	A	B	A	B
8	58.00	31	73.00	53	87.50
9	58.75	32	73.75	54	88.25
10	59.25	33	74.50	55	88.75
11	60.00	34	75.00	56	89.50
12	60.75	35	75.75	57	90.25
13	61.25	36	76.50	58	90.75
14	62.00	37	77.00	59	91.50
15	62.50	38	77.75	60	92.25
16	63.25	39	78.25	61	92.75
17	64.00	40	79.00	62	93.50
18	64.50	41	79.75	63	94.00
19	65.25	42	80.25	64	94.75
20	66.00	43	81.00	65	95.50
21	66.50	44	81.75	66	96.00
22	67.25	45	82.25	67	96.75
23	67.75	46	83.00	68	97.50
24	68.50	47	83.50	69	98.00
25	69.25	48	84.25	70	98.75
26	69.75	49	85.00	71	99.25
27	70.50	50	85.50	72	100.00
28	71.25	51	86.25		
29	71.75	52	87.00		
30	72.50				

7.2 Affective Form


SCA Coffee Value Assessment

Affective  
Form

Name .....

Date .....

Purpose .....



IMPRESSION OF QUALITY

Ⓛ

EXTREMELY LOW

Ⓜ

VERY LOW

Ⓜ

MODERATELY LOW

Ⓛ

SLIGHTLY LOW

Ⓝ

NEITHER HIGH NOR LOW

Ⓛ

SLIGHTLY HIGH

Ⓜ

MODERATELY HIGH

Ⓜ

VERY HIGH

Ⓛ

EXTREMELY HIGH

SAMPLE NO.

SAMPLE NO.

Fragrance

1

2

3

4

5

6

7

8

9

FINAL

Aroma

1

2

3

4

5

6

7

8

9

FINAL

Notes

Fragrance

1

2

3

4

5

6

7

8

9

FINAL

Aroma

1

2

3

4

5

6

7

8

9

FINAL

Notes

Flavor

1

2

3

4

5

6

7

8

9

FINAL

Aftertaste

1

2

3

4

5

6

7

8

9

FINAL

Notes

Flavor

1

2

3

4

5

6

7

8

9

FINAL

Aftertaste

1

2

3

4

5

6

7

8

9

FINAL

Notes

Acidity

1

2

3

4

5

6

7

8

9

FINAL

Notes

Acidity

1

2

3

4

5

6

7

8

9

FINAL

Notes

Sweetness

1

2

3

4

5

6

7

8

9

FINAL

Notes

Sweetness

1

2

3

4

5

6

7

8

9

FINAL

Notes

Mouthfeel

1

2

3

4

5

6

7

8

9

FINAL

Notes

Mouthfeel

1

2

3

4

5

6

7

8

9

FINAL

Notes

Overall

1

2

3

4

5

6

7

8

9

FINAL

Notes

Overall

1

2

3

4

5

6

7

8

9

FINAL

Notes

NON-UNIFORM CUPS

□

□

□

□

DEFECTIVE CUPS

□

□

□

□

DEFECT (IF ANY)

□

MOLDY

□

PHENOLIC

□

POTATO

NON-UNIFORM CUPS

□

□

□

□

DEFECTIVE CUPS

□

□

□

□

DEFECT (IF ANY)

□

MOLDY

□

PHENOLIC

□

POTATO

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Learn more: [sca.coffee/value-assessment](https://sca.coffee/value-assessment) Calculate total score: [sca.coffee/cupping-score](https://sca.coffee/cupping-score)



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