

A New Method for the Assessment of Coffee Sensory Quality by Experts

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Acknowledgment:
 Andrew Cotter

Overall quality
 Please rate the overall quality of the coffee on a 100-point scale.

Adequacy of select attributes – Just-About-Right (JAR) scaling

Appearance – Please indicate how you feel about the appearance of the coffee (circle your answer):

The color:
 Much too light Somewhat too light Just about right Somewhat too dark Much too dark

Flavor (Aroma, Taste & Trigeminal) – Please indicate how you feel about the flavor of the coffee (circle your answer):
 Much too weak Somewhat too weak Just about right Somewhat too strong Much too strong

Acidity – Please indicate how you feel about the acidity of the coffee (circle your answer):
 Much too low Somewhat too low Just about right Somewhat too high Much too high

Body – Please indicate how you feel about the body of the coffee (circle your answer):
 Much too thin Somewhat too thin Just about right Somewhat too thick Much too thick

Fruit Ripeness – Please indicate how you feel about the coffee fruit ripeness (circle your answer):
 Very under ripe Somewhat under ripe Just about right Somewhat over ripe Very over ripe

Description of the coffee – Check All That Apply (CATA)
 From the list of attributes/bodies in each category below, please check all that apply to the coffee.

Flavor (Aroma, Taste & Trigeminal)

Roasted	Unroasted/Grainy	Smoky	Woody	Chocolate	Syrupy
Crusty	Bland	Acid/Over	Bitter	Sweet	Controlled
Stale/Flat	Stale	Stale	Controlled	Stale	Uprising
Harsh					Atypical

Body/Texture

Thin	Yes	Weak	Astringent	Sour/Flat
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Notes/Comments

Default

Light/Thin	Paper/Cardboard	Unwashed	Basic	Rubber
Mediocre	Handmade/Tur	Wet	Metallic	

Comments:

Introduction

- There are 3 types of sensory evaluation of coffee:
- Quality ratings by experts (Q-grading/SCA) on a 100-point scale
 - Descriptive analysis by trained panels
 - Affective testing with consumers

Coffee Quality Method

- Inspired by our consumer testing methodology
- Deconstructs and justifies 100-point score with just-about-right (JAR) scaling of select sensory attributes and check-all-that-apply (CATA) selections among sensory and holistic attributes
- Provides assessment of expert performance

Conclusion/Perspectives – Coffee Quality is...

... actionable at origin (by growers and traders) and retail (by marketers and consumers)
 ... applicable to all coffee types - cupped, espresso, drip, cold brew, etc.

Figure 1: Coffee Quality Scorecard

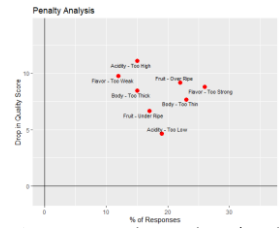


Figure 4: Penalty Analysis (Quality Rating vs. JAR ratings)

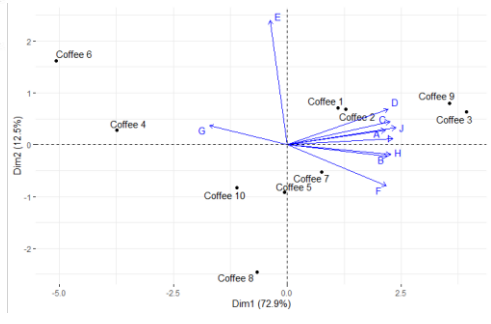


Figure 2: Internal Quality Map showing experts as variables and coffees as objects. Coffees 3 & 9 are highest in quality, 4 & 6 are lowest. Experts A, B, C, D, F, H, I & J are aligned on quality, E and G are not.

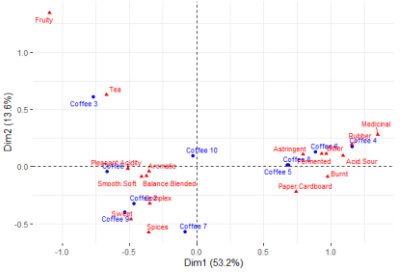


Figure 3: Sensory Map - Correspondence Analysis of CATA selections, showing coffees and attributes

Coffee Quality Stats and Dashboard

- Mean Quality Ratings (across experts)
- Internal Quality Map (from PCA of Quality Ratings)
- Quality Dendrogram (from Cluster Analysis of Quality Ratings)
- JAR rating distributions (too low – just right – too high) for select sensory attributes
- Quality Penalty Analysis (vs. JAR ratings)
- Quality Penalty Analysis (vs. CATA selections)
- Sensory Map (from Correspondence Analysis of CATA selections)
- Word Clouds (from CATA selections and comments)

References:

Delgado C. and Guinard, J.-X. (2012) Internal and external quality mapping as a new approach to the evaluation of sensory quality – a case study with olive oil. *J. Sensory Studies*, 27:332-343.