

Cupping quality evaluation of hybrids of *Coffea arabica*

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Introduction

Cupping quality represents one of the most important factors for purchasing decisions and pricing. Varieties with high cupping scores are not always associated with other important traits like yield and disease resistance. A fast solution is the development of hybrid varieties that could combine to achieve high levels of productivity and quality.

Materials/Methods

Thirty hybrids and Marsellesa were evaluated by 8 professional cuppers. The hybrids consist in combinations of four female lines (Geisha, IAPAR 59, Marsellesa and Obata) crossed to accessions originating from Ethiopia, conserved at CATIE genebank. The hybrids were grown in the Aquires farm (1,100 masl) in Costa Rica, grown in a non-shaded system. The cherries were wet processed, and the green coffee was all centrally roasted and frozen, shipped in 4 consecutive weeks. Two samples of three commercial coffees were included in each week for each cupper as controls to help assess the variation and repeatability. The SCA cupping protocol was used, with the addition of a standardized list of sensory descriptors provided by the Tastify cupping app. Also included was a survey question about meeting quality specifications, scored from low (1) to high (5).

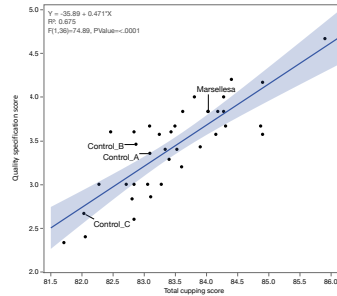


Figure 1: Association between purchasing intent and total cupping score

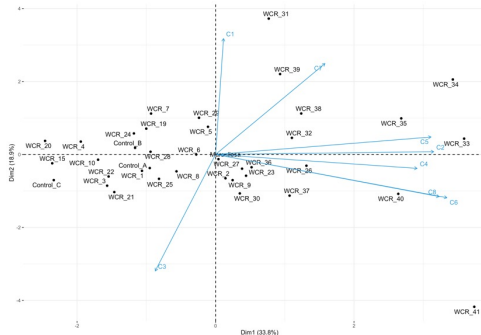
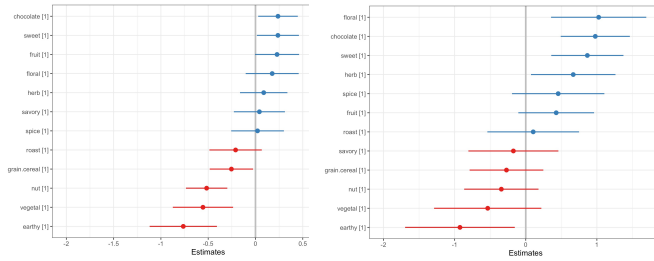


Figure 2: Biplot of principal components of varieties and cuppers for total cupping score



Quality specification score Total cupping score
Figure 3: Estimates of the individual SCA component scores on quality specifications and total cupping score

Results/Discussion

The coefficient of variation was 0.12 and 0.84 for repeatability of total cupping score. Variety, cupper and its interaction were significant. Six clusters were found for hybrids and 3 for cuppers. The purchase intent was highly associated with total cupping score. Flavor and body were the best predictors of purchase intent. Floral, sweet, fruit and chocolate were the best predictors of flavor score.

Conclusion/Perspectives

Results underlined the need for the use of a relatively high number of cuppers and the usefulness of collecting and analyzing descriptive data. The evaluation helped identify the hybrids with high cupping scores and flavor profiles, as well promising parents to include in breeding programs to improve the quality.