

Chemical Composition of Specialty Coffees From the Southern Brazil Women Contest

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Introduction

Consumers are looking for better quality coffee beverage with special characteristics. The coffee consumption in this category grows by 21% per year in Brazil. The increase in this coffee consumption is influenced by publicity actions through quality contests. The women coffee producers in the southern region of Brazil has gained prominence for the production of high quality coffees. Participants beverages in this contest are coffees with post-harvest peeled cherry (CD) and natural (CN). Sensorial evaluation was performed on protocols established by the SCA. This study aimed to characterize and correlate the chemical composition with the SCA score of coffees participating in the quality contest for women.

Materials/Methods

Among the 36 CD and 25 CN from different local cultivation and cultivars were selected 10 CD and 12 CN were selected by presented higher SCCA scores (>78). The green coffee beans were frozen (-18°C) and immediately grounded prior to analysis using liquid nitrogen to prevent oxidation of the matrix compounds. Caffeine, sucrose, reducing sugar (RS), total phenolics (TP), total chlorogenic acids (TCQA), proteins, lipids, cafestol and kahweol was performed by near infrared spectroscopy (NIRS) using developed prediction models [1]. Sensorial evaluation was performed on roasted coffees and followed protocols established by the SCAA. Principal component analysis (PCA) was used to analyze the data.

Results/Discussion

PCA promoted the discrimination of coffees from the women quality contest. In general, CD coffees were allocated on the right side of the biplot (F1+) and had the highest values of caffeine, sucrose, TP, TCQA, proteins and cafestol (Fig. 1). On the opposite F1(-), CN coffees presented high RS and lipids. F2 discriminated coffees by diterpens contents, where cafestol was discriminant for F2+, and kahweol para F2- and they are related to the genetic variability of each cultivar. CD Catuaí cultivars and CD Arara presented similar composition in F1+ and presented high content of cafestol. CD and CN IPR 99 and IPR 98 formed the other group in F1+ too, and presented high kahweol level. CN Bourbon red, Icatu red, Mundo Novo, IAPAR 59 and Arara CD presented the RS and lipids composition and cafestol (F1-, F2+). Finally, coffees located in the lower left quadrant showed high levels of RS, lipids and kahweol.

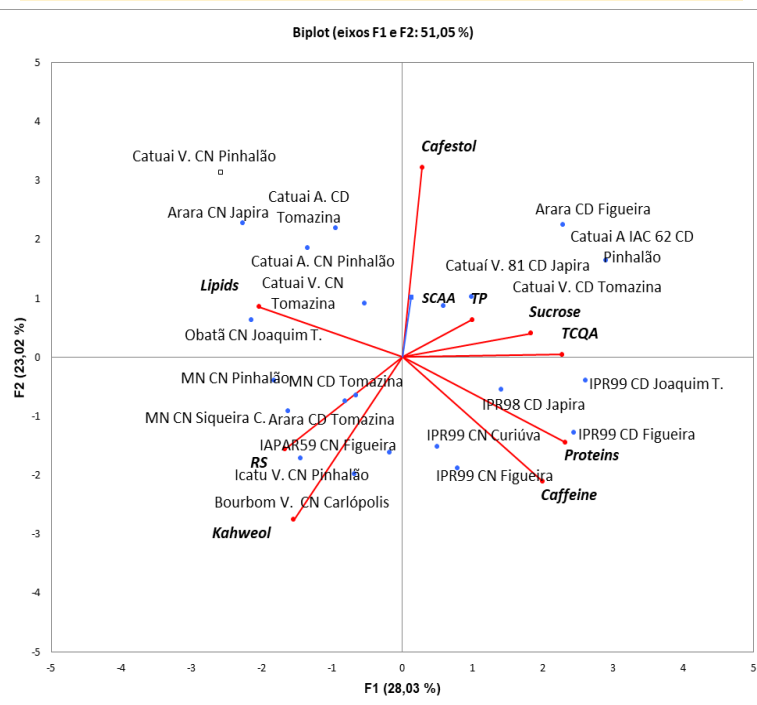


Figure 1: PCA biplot of CD and CN coffee samples based on chemical and sensory variables.

Conclusion/Perspectives

Coffees from CD processing showed a greater number of flavor and aroma precursor compounds and that the genetic variability marked by diterpenes also promoted the differentiation of these coffees.

References:

1. Scholz, M.B.S. et al. (2018). *European Food Research and Technology*, doi.org/10.1007/s00217-018-3091-7.