

Chemical bioprospecting of *Coffea canephora* var. Conilon: A new generation of Brazilian genotypes for the specialty coffee industry

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Introduction

The growth of the specialty coffee market has opened new opportunities for *Coffea canephora*. Given its wide genetic diversity in Brazil, bioprospecting for genotypes with superior chemical profiles is essential for the production of high-quality coffees. This study evaluated the caffeine, trigonelline, and chlorogenic acid content of new genotypes of *C. canephora* var. Conilon.

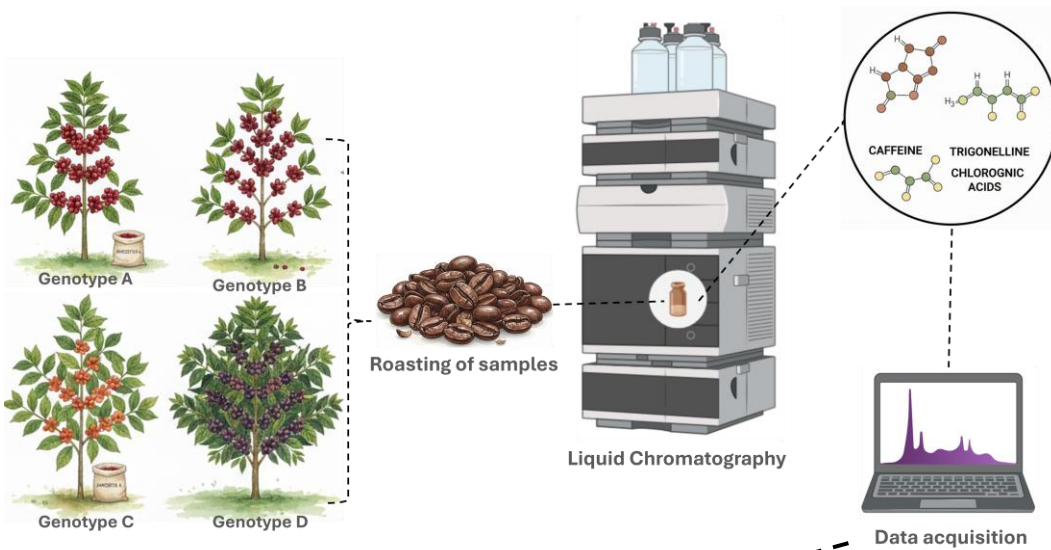


Figure 1: Study methodology

Materials/Methods

Forty-two new genotypes of *C. canephora* var. Conilon were analyzed for caffeine, trigonelline, and chlorogenic acids by liquid chromatography with UV detection and refractive index. The ground coffee was extracted in ultrapure water, filtered, and analyzed on a C18 column and acetic acid/methanol mobile phase.

Results/Discussion

A significant variation in the levels of caffeine, trigonelline, and chlorogenic acid was observed among the genotypes, evidencing remarkable chemical diversity.

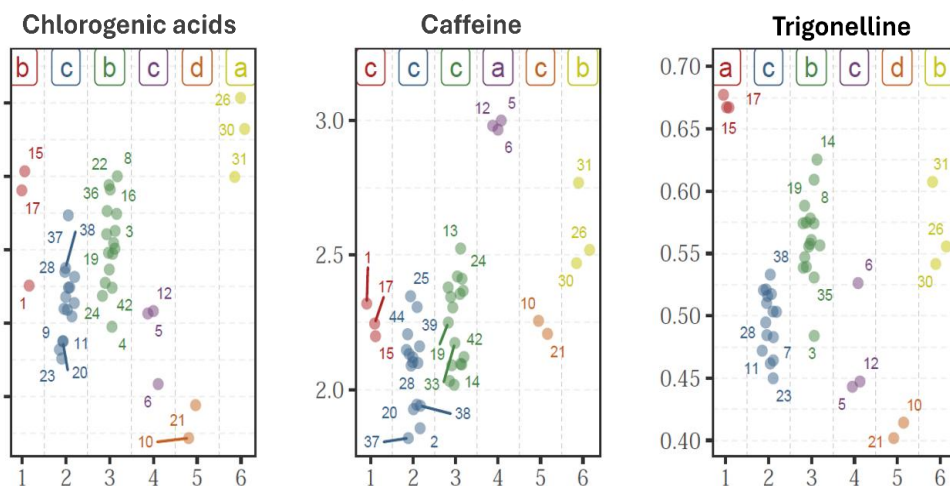


Figure 2: Clustering based on chlorogenic acids, caffeine, and trigonelline levels in *C. canephora* genotypes. Different letters indicate statistically distinct means by the Tukey test ($p \leq 0.05$).

Conclusion/Perspectives

The diversity found highlights opportunities for the selection of superior materials and encourages additional studies on other chemical compounds, sensory profiles and agronomic characteristics for the specialty coffee market.

References:

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