

Establishing a relationship between cherry chemical composition and quality parameters in highly-fermented coffee samples

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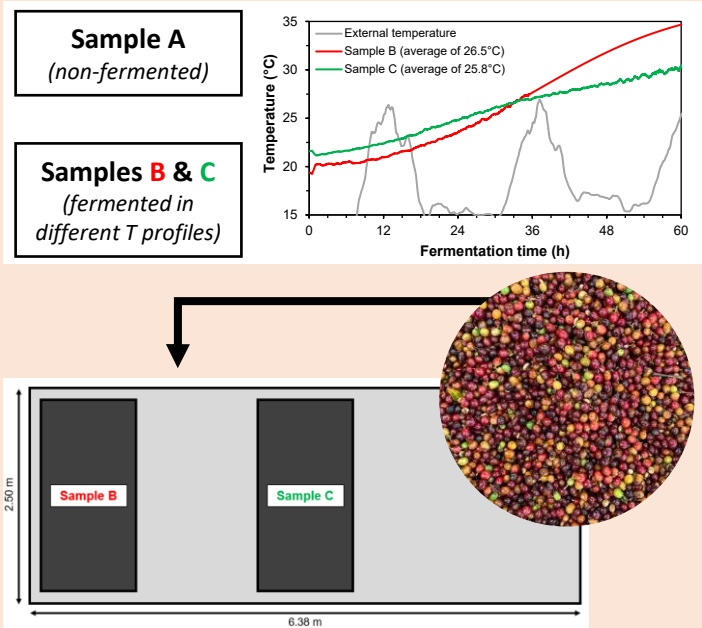
Introduction

- Acetic and propionic acids: commonly attributed to off-flavors (e.g. vinegary, rancid)^[1]
- In coffee fermentation^[2,3]: high concentrations can indicate lack of process control
- Impact in chemical composition and final quality properties^[4]

OBJECTIVE: To compare fruit and green/roasted bean parameters of coffee samples with different fermentation aspects

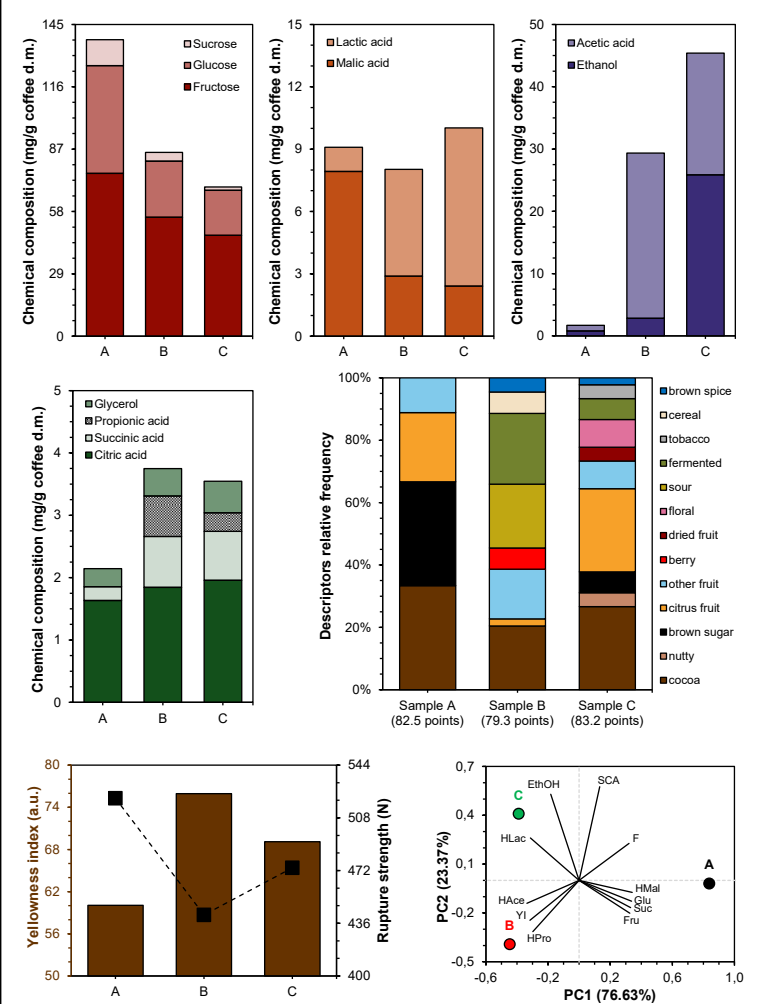
Methodology

- Arabica coffee (cv. Catiguá MG2) cultivated at 1048 m
- Cerrado Mineiro region (Brazil)
- Process in a 14000 L steel bioreactor (6.38x2.50x0.87 m)
- Solid-state fermentation with natural microbiota
- Fermentation time of 60 h



- Coffee fruits: chemical composition determined by HPLC
- Green beans: yellowness index (CIELab colorimeter) and rupture strength (texture profile analysis)
- Roasted beans: cupping following SCA protocol
- Statistical differences: ANOVA with Tukey's test ($p < 0.05$)

Results



Conclusions & Perspectives

- Both fermented samples (B and C) showed presence of propionic acid and high content of acetic acid
- Sample C fruits showed higher concentration of ethanol and lactic acid
- Sample C had lower deterioration on green bean properties and a final beverage with better uniformity and complexity

References:

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Acknowledgments:

