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SENSORY PROFILE OF COFFEA CANEPHORA SUBMITTED TO INNOVATIVE FERMENTATION

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INTRODUCTION

Coffea canephora accounts for 44 % of the world's production and has gained prominence in the global market due to its unique and distinctive characteristics. Brazil is the second-largest producer of this specie.

The demand for coffee with better quality and a diverse sensory profile (fruity, floral, vanilla) has been increased.

Post-harvest techniques such as fermentation can be used to create distinct sensory profiles meeting consumer demands.

Self-induced anaerobiosis fermentation (SIAF) is a innovative method of coffee fermentation proposed recently (da Mota et al 2020).

Cassimiro et al. (2023), da Mota et al.(2020), do Rosário et al. (2023), ICO (2024).

Self-induced anaerobiosis fermentation (SIAF)

- In the SIAF method coffee is fermented in closed bioreactors where oxygen is consumed, and CO_2 is gradually produced due to the metabolic activity of microorganisms.
- The changes in the composition of the gaseous atmosphere during fermentation lead to shifts in the dynamics of the microbial populations present in the coffee.
- These shifts, influence the chemical composition of the beans and consequently the sensory quality of the beverage.
- The consumption of oxygen during fermentation inhibits the growth of aerobic mycotoxigenic filamentous fungi and favors the metabolism of lactic acid bacteria and yeasts.
- The coffees present more intensified fruity notes related to yeasts and LAB metabolism, which can produce volatiles compounds like acids, esters and ketones.
- However, studies of SIAF method applied to *Coffea canephora* are scarce.

da Mota et al.(2020), do Rosário et al. (2023), Febrianto and Zhu (2024).

OBJECTIVE

This study aimed to evaluate modifications in the final score and sensory profile caused by the SIAF compared to the Conventional processing of Canephora coffee.

METHODOLOGY

Coffea canephora var. conilon, k61 clone, Itarana –ES, Brazil, at 300 m

Whole fruits – Natural coffee

Pulped fruits – Pulped coffee

Conventional processing

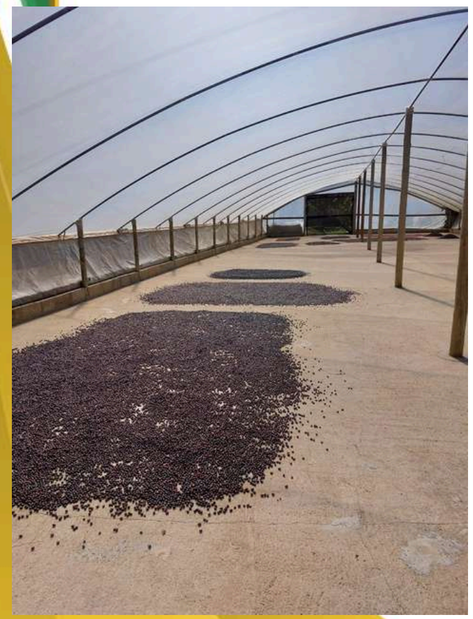
Drying on cement pátios until 11 -12 % of humidity

SIAF method

Fermented in closed polyethylene bioreactors with airlock and thermometer for 72h

METHODOLOGY

Drying until 11-12 % humidity on cement patios



Roasting according to International Coffee Organization (ICO) protocol

Cupping according to ICO protocol by tree certified taster (Q-Graders)

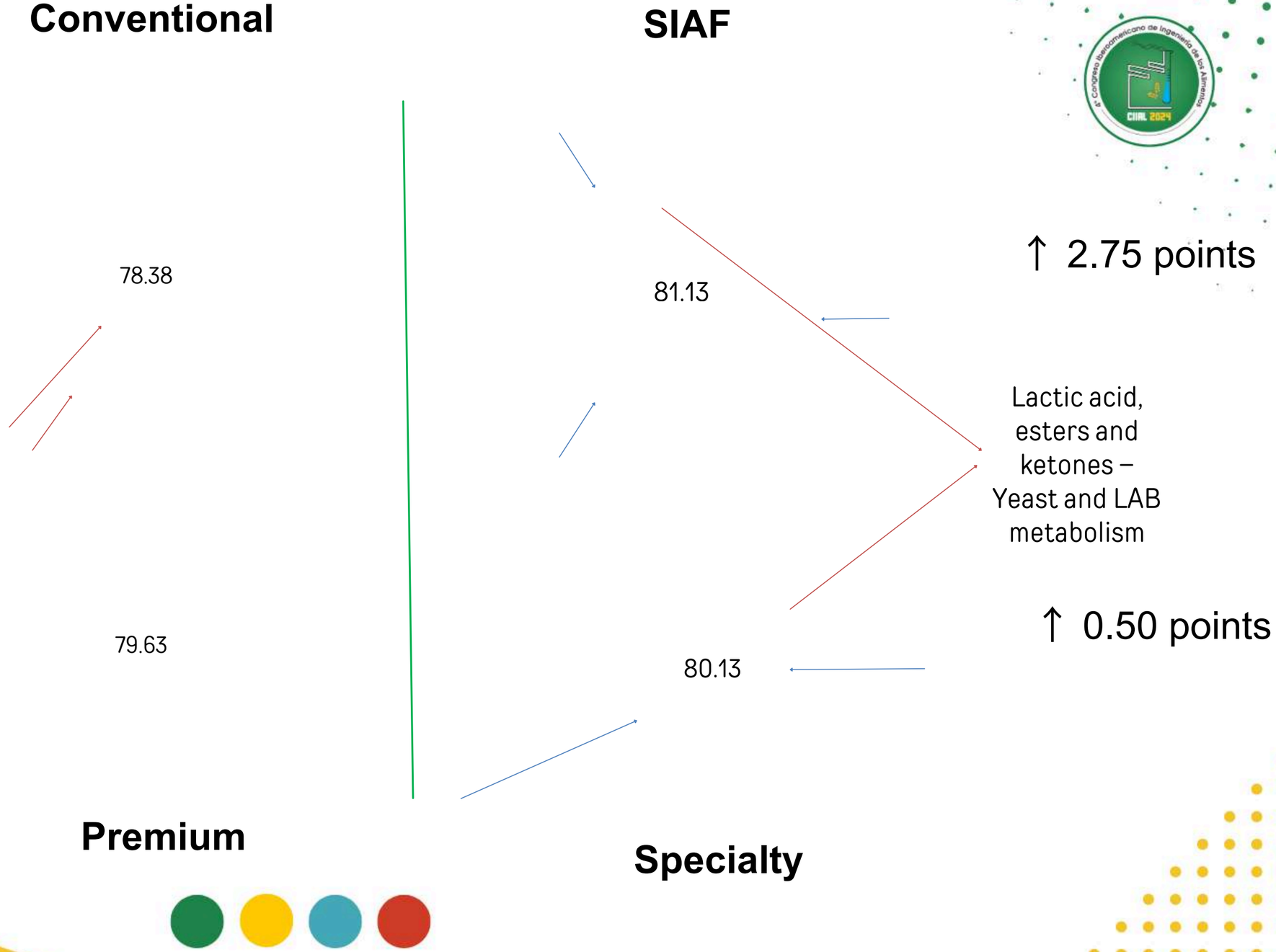
ICO 2010

RESULTS

Coffees submitted to the Conventional processing were classified as “Premium” (70-79 points).

Coffees fermented using the SIAF method were classified as special (>80 points).

The highest final score (81.13 points) was given to the Natural SIAF, which also presented the highest score gain compared to the Natural Conventional (2.75 points).



CONCLUSION

SIAF method can be used to obtain special canephora coffee resulting in a beverage with higher score and sensory complexity, mainly in natural coffee.

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Coffee producers

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