

# Evaluation of the volatile composition of cultivation of coffee in different

## agroforestry systems submitted to different post-harvest processing

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### Introduction

The *Coffea arabica* species is characterized by adapting to different agricultural systems, however, the two commonly known are full sun agricultural systems and agroforestry systems (AFS). This study aimed to evaluate the volatile composition of coffee cultivated in two AFS, the syntropic AFS and the natural/wild AFS.

### Materials/Methods

Arabica coffee fruits were harvested in Ceará, Brazil, in 2 AFS and 5 processes: Natural, Semi-dry, Washed, Yeast and Bacterial Fermentations. The GC-MS was applied for identification of volatile compounds present in the coffee samples.

### Conclusion/Perspectives

The GC analysis enabled the identification of changes in the profile of volatile compounds in coffee cultivated in different AFS. Additionally, it allowed for differentiation between post-harvest treatments. AFSs and fermentation processes impact the chemical quality of coffee beans.

### References:

Breitler, et al. 2022. *Plants* 11(16).

Martins, et al. 2023. *European Food Research and Technology*, 3.

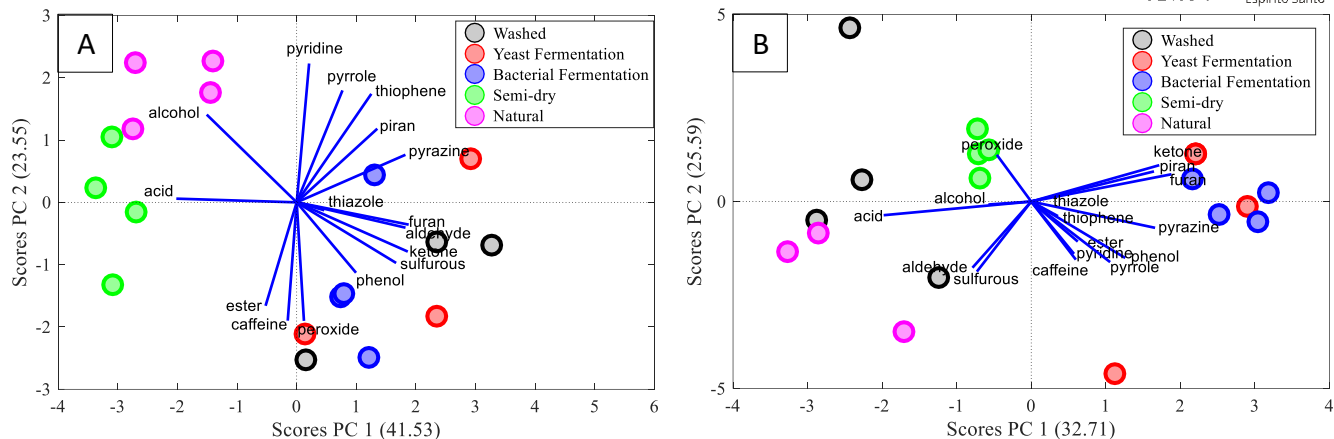


Figure 1: Scores and Loadings Graph to the wild/natural AFS (A) and conversion to syntropic AFS (B).

### Results/Discussion

GC was able to identify chemical alterations in roasted coffee beans from different AFS. Additionally, distinct groups were observed within the same system based on the type of processing applied.