

# Study of chemical variation in carbonic maceration of *Coffea canephora* var. Conilon as a function of fermentation time using infrared microscopy

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## Introduction

The duration of fermentation during carbonic maceration (CM) in coffee is a crucial factor, which can affect the chemical compounds present in coffee beans. With the aim of investigating the chemical variation of the CM of *C. canephora* as a function of fermentation time, this study used infrared microscopy as an analytical technique.

## Materials/Methods

Fruits of the species *C. canephora* var. Conilon were submitted to CM [1] at 18° C, during 24, 48, 72, 96 and 120 hours of fermentation. Infrared spectra were obtained according to the methodology followed by Gomes et al., [2].

## Conclusion/Perspectives

The results suggest differences in the composition of the chemical classes as a function of the duration of fermentation time. Thus, identifying compounds and correlating them with the quality of the beverage will be important for the adoption of adequate parameters for MC in *C. canephora*.

## References:

1. Junior, D. B., et al. (2021). Microbial fermentation affects sensorial, chemical, and microbial profile of coffee under carbonic maceration. *Food Chemistry*, 342, 128296.
2. Gomes, W. D. S., et al. (2022). Changes in the Chemical and Sensory Profile of *Coffea canephora* var. Conilon Promoted by Carbonic Maceration. *Agronomy*, 12(10), 2265.

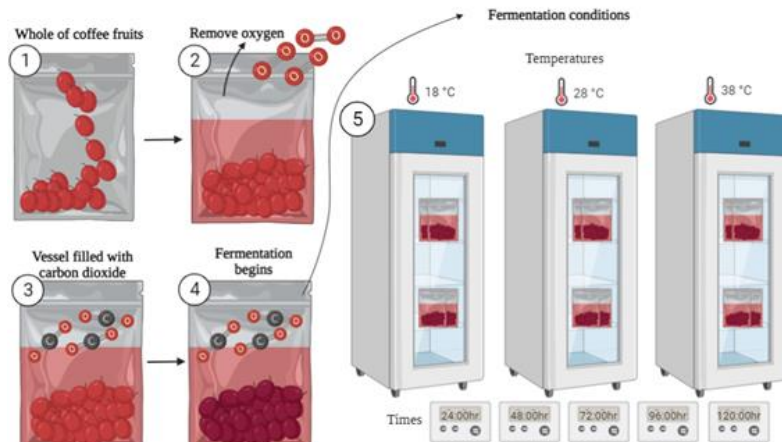


Figure 1: Carbonic fermentation process

## Results/Discussion

Principal component analysis was able to identify the separation of fermentation times. The separation of the times of 24 h and 96 h concentrated on the negative axis and the times of 48, 72 and 120 h on the positive axis of PC1