

**TITLE:** APPLICATION OF *Saccharomyces cerevisiae* AND *Torulaspota delbrueckii* AS STARTER CULTURES IN SEMI-DRY PROCESSED COFFEE AND IMPROVEMENT OF SENSORY ATTRIBUTES

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Sensory analysis is one of the most important requirements to ensure the quality of coffee. The purpose of this study was to evaluate the sensory effect of inoculation of two yeasts *Saccharomyces cerevisiae* CCMA 0200, CCMA 0543 and one yeast *Torulaspota delbrueckii* CCMA 0684 obtained from the Culture Collection of Agriculture Microbiology (CCMA) in two varieties of coffee (Ouro Amarelo and Mundo Novo) processed by semi-dry method. Two techniques of sensory analysis were used (cup taste and TDS analysis). Depulped coffee beans (60 Kg) were inoculated with strains ( $10^7$  cells/g) separately and compared with a non-inoculated control samples. Cup taste sensory analysis was performed by three certified specialty coffee judges (SCAA). The evaluated sensory attributes were fragrance/aroma, flavor, acidity, body, balance, aftertaste, overall impression, uniformity, sweetness, and clean cup. Besides these attributes, tasters were asked to describe the characteristic flavors of each coffee. Temporal Dominance of Sensations (TDS) analysis was made by selected and trained tasters. The treatments with Ouro Amarelo variety showed the highest scores for the attributes evaluated in relation to variety Mundo Novo. Among the treatments with the Ouro Amarelo, CCMA 0543 presented the highest final score (82.17) and the variety Mundo Novo control presented the highest final score (76.25). TDS analysis revealed that treatments performed with strains CCMA 0543 and CCMA 0684 with both varieties improved the sensations of coffee beverage. The variety Ouro Amarelo CCMA 0543, highlighted acidity and nuts sensations and Mundo Novo inoculated with CCMA 0543 and CCMA 0684 treatments reduced sensation of astringency. The addition of CCMA 0543 starter culture highlighted the acidity of the coffee described as delicate acidity and lemon flavor, an important attribute that can be perceived in quality coffees. Using starter cultures in coffee fermented by a semi-dry process, the variety Ouro Amarelo showed better sensory characteristics than Mundo Novo after inoculation. *S. cerevisiae* CCMA 0543 produced coffee with higher quality attributes than *S. cerevisiae* CCMA 0200 and *T. delbrueckii* CCMA 0684, respectively. The addition of starter cultures aid to control the fermentation process, thus, ensuring the formation of desirable aromas and flavors, which increase the possibility of producing specialty coffees.

**Keywords:** sensory analysis, coffee fermentation, starter culture, yeasts.

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