

SENSORY RESPONSE TO DIFFERENT FERMENTATION PROCESSES OF COFFEE GROWN UNDER BIODYNAMIC MANAGEMENT

RESPOSTA SENSORIAL A DIFERENTES PROCESSOS FERMENTATIVOS DO CAFÉ CULTIVADO SOB MANEJO BIODINÂMICO

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Abstract

Since Brazil is the largest producer and exporter of coffee in the world, the use of agricultural practices that can favor the quality of this product in the country is of great importance. The fermentation processes of coffee beans, which can influence their sensory characteristics, are the subject of much research around the world. To improve the sensory attributes of the beverage, it is worth investigating whether control of the fermentation phase is a key point in the post-harvest stages, since microorganisms can produce metabolites from the chemical and biochemical changes that occur with coffee beans during processing, detracting from the quality of the final product. In order to find the best fermentation process for this crop, this study evaluated the biodynamic management through investigation of different fermentation processes with arabica coffee. The beans were harvested at Fazenda Camocim, located in the municipality of Domingos Martins, in the mountainous region of the state of Espírito Santo, and were taken to the Coffee Research and Analysis Laboratory (LAPC) at the Venda Nova do Imigrante Campus of IFES. The genetic material used was the yellow Bourbon variety. The beans were subjected to different fermentation processes, and each treatment was subdivided into five replications, conducted in a randomized block design, as follows: Washed (hulled coffee, with fermentation induced in water, for 72 hours, anaerobically); Yeast fermentation (hulled coffee, with fermentation induced with *Saccharomyces cerevisiae* spp., in water for 72 hours, anaerobically), Semi-dry (hulled coffee, spontaneously fermented) and Natural (coffee with husk, spontaneously fermented). After the fermentation and drying process, the coffee beans were roasted and the sensory analysis was conducted according to the Specialty Coffee Association (SCA) protocols, performed by trained tasters, called Q-Graders, to evaluate the quality of the coffee beans. Ten sensory attributes were investigated: Fragrance/Aroma, Uniformity, No Flaws (Clean Cup), Sweetness, Flavor, Acidity, Body, Finish, Balance and Flaws. The data were submitted to analysis of variance and the averages of the final grades were compared using the Tukey test. The analyses showed there was a significant difference between the treatments, and the final average grades of the four processing methods were as follows: Washed: 82.66; Yeast fermentation: 83.90; Semi-dry: 84.04; and Natural: 85.20. Through these results, it was possible to identify changes in the sensorial profile of the coffees, which were directly related to the final grade. The induced fermentation coffees obtained lower scores than the spontaneously fermented coffees, so that only the Washed treatment differed statistically from the natural treatment, but the others did not differ from each other by the Tukey test at 5% probability. These results demonstrated that the biodynamic system of coffee growing at the farm in question promoted better sensory results with spontaneous fermentation. According to the SCA, coffees with a final grade of 80 points onwards are classified as specialty coffees, and as this grade increases, the sensory attributes of the coffee become more intense and pleasant. Therefore, all coffees in the experiment were classified as specialty coffees, contributing to demonstrate that biodynamic management can be a positive tool to improve the quality of the coffee beverage, providing greater gains for producers.

Keywords

Biodynamic agriculture, Sensory analysis, Specialty coffees.

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