

Agriculture & Food Chemistry

July 23-24, 2018
Rome, Italy

J Food Nutr Popul Health 2018, Volume 2
DOI: 10.21767/2577-0586-C2-006

IDENTIFICATION OF FERMENTATION FACTORS THAT DETERMINE THE QUALITY OF CACAO

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In Colombia, cocoa cultivation is a good alternative for the high and growing demand for cocoa in the world, especially for fine and flavor cocoa. Colombia's production zone has a privileged geographic position for cultivating this type of cocoa. However, many factors influence its quality. One of these factors is the fermentation process, as is the stage where the formation of flavor precursors takes place. Then the quality of fine and flavor cocoa could be lost if the fermentation is not carried out under certain conditions. This project looks at getting a better understanding of how the fermentation process is carried out in three different places in Colombia and how these practices could affect the cocoa quality. We controlled the fermentation process each 24 hours, analyzing the change in different variables such as pH, total

acidity, sugar content, total polyphenols, theobromine, caffeine, reducing sugars, proteins and amino acids. Moreover, we analyzed the aromatic profile, and the sensorial analysis of the cocoa produced. Results showed significant differences in quality of the cocoa, but neither of them released distinctive aromatic notes that allow classifying such as fine and flavor cocoa. However, we have identified two factors that are mainly responsible for this behavior, the temperature, and the pH, which never reaches the value required according to literature, for the optimal activity of endogenous enzymes involved in the degradation of bean proteins and the generation of various flavor precursors.

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