

Effect of clonal variety and fermentation duration on cocoa flavor

ABSTRACT

The quality of cocoa is determined by its unique and complex flavors which are contributed by several factors. This study aimed to investigate the cocoa flavor of three Malaysian cocoa clones, MCBC5, 4, and 2 fermented at different durations. Fresh cocoa beans were fermented for six days, and were sampled every 24 hours for drying. The quality of fermentation was determined by cut test and fermentation index (FI) of the dried beans. The cut test results showed that MCBC5 took the longest to be fully fermented (6 days) whereas MCBC4 and 2 took only five days. However, FI analysis, presented earlier completed fermentation. A portion of dried beans were roasted for 25 min at 127^o C and ground to cocoa liquors for sensory evaluation by the Malaysian Cocoa Board's trained panelists with Ghanaian cocoa liquor as the standard. The most intense cocoa flavor was MCBC2 fermented for five days (4.11 ± 0.83). The strong cocoa flavor in MCBC2 could be due to its low bitterness (2.86 ± 0.68) and astringency (3.56 ± 0.66) level and moderate level of acidity (1.86 ± 0.76) as high levels of bitterness, astringency, and acidity are known to mask the cocoa flavor, thus produce poor cocoa flavor. In conclusion, MCBC2 fermented for five days had the best cocoa flavor when compared with the MCBC5 and MCBC2.