

Effects of Fermentation Techniques on the Quality of Cocoa Beans

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Abstract : Fermentation as an important operation in the processing of cocoa beans is now affected by the recent climate change across the globe. The major requirement for effective fermentation is the ability of the material used to retain sufficient heat for the required microbial activities. Apart from the effects of climate on the rate of heat retention, the materials used for fermentation plays an important role. Most Farmers still restrict fermentation activities to the use of traditional methods. Improving on cocoa fermentation in this era of climate change makes it necessary to work on other materials that can be suitable for cocoa fermentation. Therefore, the objective of this study was to determine the effects of fermentation techniques on the quality of cocoa beans. The materials used in this fermentation research were heap-leaves (traditional), stainless steel, plastic tin, plastic basket and wooden box. The period of fermentation varies from zero days to 10 days. Physical and chemical tests were carried out for variables in quality determination in the samples. The weight per bean varied from 1.0-1.2 g after drying across the samples and the major color of the dry beans observed was brown except with the samples from stainless steel. The moisture content varied from 5.5-7%. The mineral content and the heavy metals decreased with increase in the fermentation period. A wooden box can conclusively be used as an alternative to heap-leaves as there was no significant difference in the physical features of the samples fermented with the two methods. The use of a wooden box as an alternative for cocoa fermentation is therefore recommended for cocoa farmers.

Keywords : fermentation, effects, fermentation materials, period, quality

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