

CHEMICAL AND MICROBIOLOGICAL CHARACTERISTICS OF COCOA BEANS FROM PIDIE DISTRICT, ACEH PROVINCE, INDONESIA

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Abstract

This research aimed to examine the chemical and microbiological characteristics of cocoa beans which are used as a raw material in a small-scale chocolate factory in Pidie Jaya District, Aceh Province, Indonesia. The information would be used to improve the overall quality of the cacao beans produced in the country. 8 triplicate samples were collected from a local farmer in Padang Tiji Sub-District, Pidie District, Aceh Province, Indonesia starting from Day 0 to Day 5 fermentation, after drying, and after roasting. The samples were then analysed for water content, pH, lactic acid bacteria (LAB), acetic acid bacteria (AAB), and yeast, using standard methods. The results showed that the water content slightly decrease during fermentation from 66.60 % to 56.40 % and continued to decline drastically to only 1 % after roasting. Also, the pH declined from 4.91 at Day 0 to 3.93 at Day 3 of fermentation suggesting the growth of LAB and AAB. Then, the pH increased again at Days 4 (4.15) and Days 5 (4.41) this increase occurs because the existing citric acid is used up during fermentation. Before fermentation, the total cell count of yeast was dominant. The highest LAB and AAB growth occurred on the second day of fermentation. These results indicate that the microflora of raw cacao beans and at the end of fermentation is dominated by yeast. It is suspected that the increase in yeast growth at the end of this fermentation is because certain types of yeast dominate.

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