

**DETERMINATION OF CALCIUM (Ca) AND MAGNESIUM (Mg)
CONTENT IN CACAO (*Theobroma cacao Linn*) FERMENTATION
AND NON FERMENTATION BY SPECTROPHOTOMETRY**

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ABSTRACT

Cacao beans contain many kinds of mineral, magnesium (Mg), calcium (Ca), Zinc (Zn), Phosphor (P) and etc. This study investigated magnesium (Mg) and calcium (Ca) in fermentation and non fermentation cacao beans by atomic absorption spectrophotometry. Mg and Ca, content in non fermentation cacao beans of green and red variety are 453 µg/g, 466 µg/g, and 491 µg/g, 445 µg/g. Mg and Ca, contents in fermentation cacao beans of green and red variety are, 596 µg/g, 528 µg/g, and 554 µg/g, 505 µg/g. Fermentation make magnesium (Mg) and calcium (Ca) content increase significantly.

Keywords : *Theobroma cacao Linn, fermentation, spectrophotometry.*

DAFTAR PUSTAKA

1. C. Bennet & F. Hasan, *Exports of low quality from Sulawesi, Indonesia; Market failure or market evolution*, International Conference on Economy, Bali, Indonesia, 1993.
2. C. Niemenak, S. Rohsius, D. O. Elwers, Ndoumou, and R. Lieberei, Comparative Study of different cocoa (*Theobroma cacao L.*) clones in terms of their phenolics and anthocyanins contents, *J. of Food Composition and Anal.*, 19.
3. A. J. Abarca, A Validated Flame AAS Method For Determining Magnesium in a multivitamin, Pharmaceutical preparation, *J. Of Pharmaceutical and Biomedical Anal.*, 25: 941-945, (2001).
4. A. Apriyantono, D. Fardiaz, N. L. Puspitasari, S. Yasni, S. Budiyanto, *Penuntun Praktek Analisis Pangan*, Pusat Antar Universitas Pangan dan Gizi, IPB, 1988, 200-203, 303-305.
5. H. D. Belitz, W. Grosch, *Food Chemistry*, Springer Verlag Berlin Heidelberg New York London Paris Tokyo.01, 16 Februari 2007.
6. Pempropsu, Karakteristik Biji Kakao Kering Hasil Pengolahan Dengan Metode Fermentasi Dalam Karung Plastik, <http://www.pempropsu.go.id.php?filename=Biji%20Kakao%20Kering.pdf&id=KA-01> (16 februari 2007).