ABSTRAK

Irawan, Koko Andi. 2013. **Kajian Kandungan Total Energi, Kadar Karbohidrat, Air, Abu, Merkuri Dan Kadmium Pada *Cookies* Berbahan Dasar Tanah Liat Dan Rumput Laut Merah *(Kappaphycus alvarezii)*.** Tugas Akhir. Program Studi Ilmu Gizi Fakultas Kedokteran Universitas Brawijaya. Pembimbing: (1) Dr. Dra. Sri Winarsih., Apt, M.Si. (2) Titis Sari Kusuma., S.Gz.

Geofagi adalah perilaku mengkonsumsi tanah, tanah liat, lumpur, abu atau batu. Rumput laut adalah bahan makanan yang mengandung tinggi serat. Permintaan terhadap produk makanan kesehatan seperti makanan bebas gula (*sugar-free food),* makanan rendah kalori *(low calorie food)* dan makanan kaya serat (*high fibre food)* meningkat dengan pesat. Produk yang dihasilkan dari tanah liat dan rumput laut adalah *cookies* dimana seluruh tepung terigu diganti dengan tanah liat dan rumput laut. Tujuan dari penelitian ini adalah untuk mengetahui pengaruh perubahan komposisi tepung tanah liat dan rumput laut terhadap total energi, kadar logam merkuri dan kadmium. Penelitian ini menggunakan penelitian experimental dengan 4 taraf perlakuan dan 3 kali pengulangan. Taraf perlakuan tersebut merupakan proporsi tepung tanah liat : tepung rumput laut P0 (100% : 0%) P1 (90% : 10%) P2 (80% : 20%) P3 (70% : 30%). Variabel bebas pada penelitian ini adalah proporsi tepung tanah liat dan tepung rumput laut, sedangkan variabel terikatnya adalah total energi dan kadar logam merkuri dan kadmium. Hasil penelitian menggunakan uji korelasi *Spearman*, didapat hasil koefisien korelasi total energi (R=0,883 ; p=0,000), kadar kadmium (R=0,197 ; p=0,357), kadar karbohidrat (R=969 ; p=0,000), kadar abu (R=-0,969 ; p=0,000), kadar air (R=0,366 ; p=0,079). Hasil analisis kadar merkuri menggunakan ICP (*Inductively Couple Plasma*) pada tepung tanah dinyatakan tidak terdeteksi. Kesimpulan dalam penelitian ini adalah peningkatan komposisi tepung rumput laut merah pada *cookies* tanah liat dapat meningkatkan kadar karbohidrat dan total energi. Kadar air cenderung mengalami penurunan. Kadar abu mengalami penurunan, sedangkan kadar kadmium cenderung mengalami peningkatan.

Kata Kunci: geofagi, tanah liat, *Kappaphycus alvarezii*, *cookies*

ABSTRACT

Irawan, Koko Andi. 2013. **Studies in Content of Total Energy, Carbohydrate, Water, Ash, Mercury and Cadmium Levels In *Cookies* That Made From Clay and Red Seaweed (*Kappaphycus alvarezii*)**. Final Assignment. Nutrition Study Program Faculty of Medicine, University of Brawijaya. Supervisors: (1) Dr. Dra. Sri Winarsih., Apt, M.Si. (2) Titis Kusuma Sari., S.Gz.

Geophagy is a human behaviour involving the ingestion of soil, clay, mud, ash or stone. Seaweed is a food that contains high fiber. The demand for healthy food products such as sugar free, low calorie and high fiber food is rapidly increasing. Combination of clay with red seaweed can produce cookies low energy and high fiber, so it can be used as a dietary for obese. The purpose of this study was to determine the effect of changes in the composition of the clay powder and seaweed to the total energy, metals mercury and cadmium levels. This study uses an experimental study with 4 levels of treatment and 3 replications. The treatment level is the proportion of clay powder : seaweed powder P0 (100% : 0%) P1 (90% : 10%) P2 (80% : 20%) P3 (70% : 30%). The independent variable in this study is the proportion of clay powder and red seaweed powder, while the dependent variable is the total energy, mercury and cadmium levels. The statistical analysis by Spearman correlation test showed, the correlation coefficient total energy (R=0.883, p=0.000), mercury level (R=-0.542, p=0.027), cadmium level (R=0.197, p=0.357), carbohydrate content (R=969, p=0.000), ash content (R=-0.969, p=0.000), water content (R=0.366, p=0.079). Mercury levels was analysis by ICP (*Inductively Couple Plasma*) in clay powder, the result is negative.The conclusion of this research shows that increasing the red seaweed powder on clay cookies can increase levels of carbohydrate and total energy. Water level tends to decrease. Ash content decreases, whereas cadmium level tends to increase.

Keywords: geophagy, clay*, Kappaphycus alvarezii,* cookies