

## **Biochemical analysis of extracting fermented coconut oil**

### **Abstract**

Vegetable oil can be produced from a perennial plant such as coconut (*Cocos nucifera* L.). There are few techniques for coconut oil extraction, such as physical, chemical, and fermentative processes. The fermentation process uses microbial inoculum as starter. Ground coconut meat was soaked in warm water, than squeezed several times to get coconut milk. After being allowed to stand for 4-5 hours, it separated into two layers, cream and skim. Starter was prepared from a mixture of milk and coconut water (1:9, v/v) which enriched with 2% tomato extract, 0.5% urea, and 1.0% molasses and then preincubated for 5 days under agitation. Starter with different concentration (1.0; 2.5; 5.0; and 10%) were added onto coconut milk and allowed to be fermented for over night. The extracting oil was analyzed for further experiment, especially, on its antibacterial activity. The maximum yield of 23% was achieved by using 2.5% starter. Total protein, fat, FFA, and cholesterol content of the fermented coconut oil were 0.05%, 96.45%, 0.29%, and 0.008%, respectively. The gas chromatogram showed that this oil contained high lauric acid (46.20%), and 13.94% miristic, 5.97% palmitic, 9.00% palmitoleic, and 19.73% stearic acid, respectively.