

Extraction of coconut oil with *Lactobacillus plantarum* 1041 IAM

ABSTRACT

Extraction of coconut oil with a pure culture of *Lactobacillus plantarum* 1041 IAM was investigated. Grated coconut meat and water at 30, 50, and 70°C were mixed in various ratios (1:1, 1:2, and 1:3) and allowed to settle for 266 h. The most efficient coconut cream separation was obtained at the 1:1 ratio of grated coconut meat to water at 70°C, followed by 6 h settling time. Fermentation was then conducted on coconut cream emulsion with the sample from 1:1 ratio, 70°C, and 6-h settling time. Oil yield from the fermentation process with 5% inoculum of *L. plantarum* 1041 IAM after 10 h at 40°C was 95.06%. Quality characteristics of the extracted oil were as follows: moisture content, 0.04%; peroxide value, 5.8 meq oxygen/kg; anisidine value, 2.10; free fatty acid, 2.45%; iodine value, 4.9; and color, 0.6 (Y + 5R). Extraction of coconut oil from coconut meat with *L. plantarum* 1041 IAM was significantly improved in both oil yield and quality over the traditional wet process.

Keyword: Coconut cream; Coconut meat; Fermentation; *Lactobacillus plantarum* 1041 IAM; Oil yield; Quality characteristics