

The effect of culture medium on the oil yield and fatty acid methyl ester of freshwater microalgae *Chlorella vulgaris*

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ABSTRACT

Microalgae are commonly used in the biodiesel industry to produce lipids. The selection of media is one of the vital factors to culture the microalgae. The *Chlorella vulgaris* used in this study as a microalgae was cultured in three different culture media, namely the Modified Bold's Basal medium (BBM), Blue-Green medium (BG11) and Jaworski's medium (JM) using the immobilization method. Through this method, all the cultured microalgae were cultivated for 11 days to evaluate the oil yield. Then, the extracted oil was transesterified to produce fatty acid methyl ester (FAME). It was found that the BBM medium showed the highest oil yield (71.43%), followed by JM (67.50%) and BG11 (53.14%). In addition, BBM also is the best composition to produce FAME as it contains high nitrogen.

KEYWORDS

Chlorella vulgaris; Culture medium; Fatty acid methyl ester; Immobilized; Microalgae; Oil yield

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