EXTRACTION OF RICE BRAN OIL BY USING N-HEXANE, ETHANOL AND COLD PRESS

By

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STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, not material which to a substantial extent has been accepted for the award of may other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

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ABSTRACT

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As a producer of rice, Indonesia produces million tons of rice. The by product of rice polishing is rice bran. Rice bran is widely used as chicken feed, but other than that, rice bran oil can be used to produce oil which has high economical value and beneficial for health. Many factors are affecting the yield and the quality of the rice bran oil, and this will be studied in this thesis. Cold press method and solvent extraction are used to extract the oil. The solvent that were used to extract the rice bran oil were ethanol or n-hexane, with mass rice bran to solvent ratio 1:6 and 1:8. Then, the temperatures of extraction were set at 40°C and 50°C for 30 minutes and 60 minutes. The yield was higher if the oil was extracted by using ethanol than by using n-hexane. On the other hand, cold press method could not produce the oil. Based on the yield, the extraction by using ethanol with mass ratio 1:6 at temperature 40°C for 60 minutes was the better one. Ethanol extracts more gamma oryzanol and less oxidized, while n-hexane has higher content of fatty acid and has undergone more oxidation process. In conclusion, ethanol are

better than n-hexane in extracting rice bran oil because it extract more oil, high in gamma oryzanol, and more preferable in food and cosmetics industry.

DEDICATION

My life at home is shared with a caring and warm family.

My life at University is shared with caring friends and talented teachers.

It is to them that this thesis is dedicated.

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