

**REGENERATION OF USED FRYING OIL USING VARIOUS
ADSORBENTS**

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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, contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

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ABSTRACT

REGENERATION OF USED FRYING OIL USING VARIOUS ADSORBENTS

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The objective of this research was to determine best performing adsorbent to be utilized in the regeneration of used frying oil in small medium enterprise without using major equipment and expensive material. Treatments covered various of adsorbent concentrations (2.5 g/100 mL, 5 g/100 mL, 7.5 g/100 mL, and 10 g/100 mL) and various types of adsorbent (zeolite, bentonite, active charcoal) with process temperature of 30°C, 40°C, 50°C, and 60°C. Tempeh was used in the preparation of used frying oil by frying it 7 times in the same oil sample. The results concluded that zeolite at 2.5 g/100 mL was the best performing adsorbent compared to bentonite and active charcoal. Process temperature at 60 °C indicated the best absorbance compared to other temperatures. Regeneration of used frying oil using zeolite was recommended to encourage food home industry in adapting food safety for the consumers.

Keywords: used frying oil, regeneration, adsorbent, zeolite, bentonite, active charcoal

DEDICATION

I dedicate this thesis to: God, my whole family who always fully support me, my dearest friends, and my thoughtful and understanding lecturers.



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