

## Reaction Characteristics of Wheat Germ Oil during Enzymatic Ethanolysis in Supercritical Carbon Dioxide

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With immobilized lipase enzymatic ethanolysis of wheat germ oil produced from by products was investigated for reducing the free fatty acid contents and enhancing the function of wheat germ oil. It is possible to convert fat in to monoglycerides and diglycerides by enzymatic ethanolysis. The experimental conditions used in this study were carried out in erlenmeyer flask (25ml) containing a mixture of wheat germ oil and 99.9% ethanol using 1–10% (based on w/w wheat germ oil) immobilized lipase (Lipozyme TL-IM, Lipozyme RM-IM). The reaction mixtures were incubated at 40–70°C and shaken at 120rpm. And batch-type reactor equipped with high pressure system condition was concentration of immobilized lipase used (2 wt.%), reaction time (60–120 minutes), reaction temperature (40–60°C), reaction pressure (100, 150, 200 bars). The samples obtained from fractions were analyzed by HPLC for their content of monoglycerides and diglycerides. The best conversion was obtained using ethanol with Lipozyme TL-IM in batch-type reaction. In this study reaction characteristics of wheat germ oil during enzymatic ethanolysis were compared with organic solvent and supercritical carbon dioxide.