

Characterization of oil from Wheat germ by Supercritical Carbon dioxide

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The supercritical fluid extraction (SFE) of wheat germ oil was studied. Supercritical fluid extraction is an alternative to conventional separation process technique which takes advantage of the enhanced solvent power of supercritical fluids. Supercritical carbon dioxide (SCO₂) extraction was applied for bio-industry (foods, medicines, cosmetics, ect) which enable to high value-added business creation.

Independent variables were operating temperature (30~60°C), pressure (8~30MPa) and flow rate (26.81g/min). Oil extraction yield increased with increasing extraction pressure. The extract was analyzed by GC technique. The main fatty acids of wheat germ oil extracted SCO₂ were linoleic acid and palmitic acid. β-caroten, an important phytochemical for natural antioxidant in the wheat bran oil extracted by SCO₂ was analyzed by HPLC and UV. Further study is going to investigate the oxidation stability of comparing the oils extracted by SCO₂ and soxhlet extraction with liquid hexane by measuring acid value.