

Comparison of Oxidation Stability of Wheat germ oil extracted using supercritical carbon dioxide and organic extraction

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Wheat germ which is the by-product of flour-milling industry is a great source of highly concentrated nutrients. Wheat germ oil is used in different applications such as foods, biological insect control agents, pharmaceuticals and cosmetic formulations, and has been shown to reduce plasma and liver cholesterol in animals and to delay aging. Supercritical carbon dioxide (SC-CO₂) and soxhlet extraction was carried out to extract oil from wheat germ. For SC-CO₂, the pressure and temperature were ranging from 10 to 30 MPa and 40 to 60°C. Wheat germ oil was characterized to investigate the oxidative stability. Acid value (AV) and peroxide value (POV) was higher in hexane extracted oil compared to SC-CO₂ extracted oil. The DPPH radical scavenging activity was also measured. The SC-CO₂ extracted oil showed higher radical scavenging activity compared to hexane extracted oil.