

Supercritical Fluid Extraction of Bioactive Compounds in Edible Oil

Joo-Seok Lee, Sang-Yo Byun

School of Biotechnology and Nanotechnology, Ajou University

TEL: +82-31-219-2457, FAX: +82-31-219-2394

Various valuable bioactive compounds exist in the sesame seed. Among them, the sesamol has been known as an antioxidant that is major bioactive compound in the sesame oil. The same raw materials roasted at 200°C for 30min, sesame oil from supercritical carbon dioxide extraction contains more sesamol than expeller extraction method. The content of sesamol with supercritical fluid extraction increased approximately 60% than extraction by expeller. To increase the sesamol concentration of sesame oil, roasting condition was optimized with different temperature at the range of 185°C~230°C and then it was extracted by supercritical carbon dioxide at various S/F ratios. Sesamol concentration is measured by High Performance Liquid Chromatography and its contents showed 50~900 ppm according to the roasting and extraction conditions.

References

1. Ryu. S. N., J. I. Lee, S. S. Kang, and C. Y. Choi (1992), "Quantitative analysis of antioxidants in sesame seeds", *Korean J. Crop Sci.* **37**(4), 377~382.
2. Mitsuo Namiki (1999), "マ-その科學と機能性", 日本ゴマ科學會, 3~94.
3. Larry T. Taylor (1996), "Supercritical Fluid Extraction", *A Wiley-Interscience Publication*, 155~166.