

Application of supercritical CO₂ in lipid extraction – a review.

ABSTRACT

Supercritical fluid extraction (SFE) offers an alternative method to conventional extraction of fatty acids. SFE was developed for analytical application in the mid-1980s in response to the desire to reduce the use of organic solvents in the laboratory environment, and it is now becoming a standard method for the extraction, fractionation, refinement and deodorization of lipids or essential oils containing sample matrices at the industrial scale. This paper reviews applications of supercritical fluid technology in fatty acid/lipid extraction using carbon dioxide. Carbon dioxide is an ideal supercritical fluid because of its environmentally benign, non-toxic, non-flammable, non-polluting, recoverable characteristics and its ability to solubilise lipophilic substances. A summary of commercial applications and examples of recent developments of SFE in the food processing industry are also reviewed.

Keyword: Supercritical CO₂; Lipid; Fatty acid; Extraction method; Food application.