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Authors:Jiang, Feng Ling (1); Ikeda, Ikuo (1); Ogawa, Yuichi (2); Endo, Yasushi (3)
Author affiliation:(1) Graduate School of Agricultural Science, Tohoku University, Sendai 981-8555, Japan; (2) Graduate School of Agriculture, Kyoto University, Kyoto 606-8502, Japan; (3) School of Bioscience and Biotechnology, Tokyo University of Technology, Tokyo 192-0982, Japan
Corresponding author:Endo, Y.(endo@bs.teu.ac.jp)
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Abstract:A rapid method for determining the saponification value (SV) and polymer content of vegetable and fish oils using the terahertz (THz) spectroscopy was developed. When the THz absorption spectra for vegetable and fish oils were measured in the range of 20 to 400 cm⁻¹, two peaks were seen at 77 and 328 cm⁻¹. The level of absorbance at 77 cm⁻¹ correlated well with the SV. When the THz absorption spectra of thermally treated high-oleic safflower oils were measured, the absorbance increased with heating time. The polymer content in thermally treated oil correlated with the absorbance at 77 cm⁻¹. These results demonstrate that the THz spectrometry is a suitable non-destructive technique for the rapid determination of the SV and polymer content of vegetable and fish oils. ©2012 by Japan Oil Chemists' Society.
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