

APPLICATION OF THE HS-SPME_GC/FID METHOD TO DETECT OF EARLY OXIDATION CHANGES OF FLAX OIL

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The aim of this work was to evaluate the possibility of application of headspace-solid phase microextraction (HS-SPME) and gas chromatography with flame-ionization detection (GC/FID) to detect early oxidation changes of flax oil.

The examined materials were cold pressed flax oils – high linolenic and low linolenic. Accelerated autooxidation process of oils was made in thermostat conditions, at the temperature of 60°C. Content of selected volatile compounds, peroxide value and anisidine value was determined, and Totox value was calculated.

It was stated, that the analysis of selected volatile compounds by HS-SPME_GC/FID method, with utilization of standard substances, is a method, which allows observation of autooxidation process of flax oil, high and low linolenic. Content of selected volatile compounds may be a good indicator of early oxidation changes of high linolenic flax oil. In the case of low linolenic oil, this analysis doesn't show significant advantages in comparison with peroxide value, anisidine value or Totox value.

Key words: flax oil, autooxidation, volatile compounds, HS-SPME_GC/FID