Analysis of Triglycerides in Olive Oil and Rap Oil using HPLC

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Food

Abstract

Unsaturated triglycerides in olive oil have very characteristic patterns. Other fats and oils are also complex mixtures of triglycerides but with different patterns.

Sample preparation

Triglycerides can be extracted from homogenized samples with petrol ether. Fats and oils can be dissolved in tetrahydrofurane.

Chromatographic conditions

The presented HPLC method was used to analyze the unsaturated triglycerides, LnLnLn, LLL, and OOO.[1]

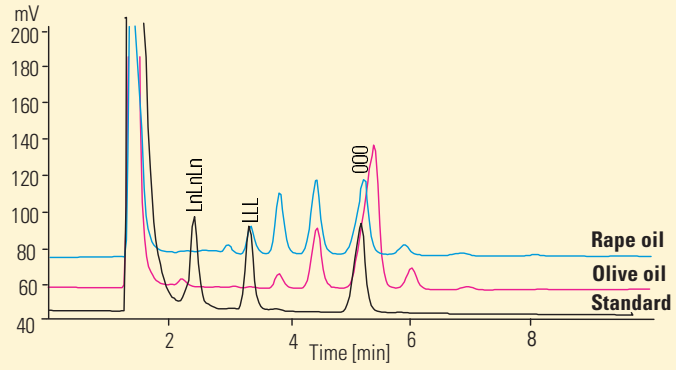

Figure 1
Analysis of the triglyceride pattern of olive and rape oil

Conditions

Column
200 ˘ 2.1 mm Hypersil MOS, 5 µm
Mobile phase
acetone/ACN (30:70)
Flow rate
0.5 ml/min
Column compartment
30 °C
Injection vol
2 µl
Detector
refractive index

Sample preparation
Samples were dissolved in tetrahydrofurane.

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HPLC method performance

Limit of detection for ECD
50 µg/l with S/N = 2

Repeatability of

RT over 10 runs	<0.3 %
areas over 10 runs	5 %

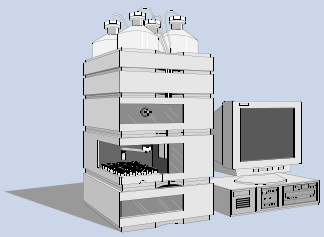
References

1.
“Determination of triglycerides in vegetable oils”, EC Regulation No. L248, 28ff.

Equipment

Agilent 1100 Series
- degasser
- isocratic pump
- autosampler
- thermostatted column compartment
- refractive index detector

Agilent ChemStation + software



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Released 09/97
Publication Number 5966-0634E

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