Triacylglycerol Composition of Walnut (Juglans regia L.) Cultivars: Characterization by HPLC-ELSD and Chemometrics by: JOANA S. AMARAL

Methods:

*The chromatographic analyses were performed with a Jasco (Japan) high-performance liquid chromatograph, equipped with a PU-1580 quaternary pump and a Jasco AS-950 automatic sampler with a 10 µL loop. Detection was performed with an ELSD (model 75-Sedere, France). The chromatographic separation of the compounds was achieved with a Kromasil 100 C18 (5 µm; 250 × 4.6 mm) column (Teknokroma, Spain) operating at ambient temperature (∼20 °C).*

* The mobile phase was a mixture of acetone/acetonitrile (70:30, v/v). Elution was performed at a solvent flow rate of 1 mL/min with an isocratic program.
* The ELSD was programmed with the following settings:
  + evaporator temperature, 40 °C;
  + air pressure, 3.5 bar;
  + photomultiplier sensitivity, 6.
* Data were analyzed using Borwin-PDA Controller software (JMBS, France). Taking into account the selectivities (R, relative retention times to LLL), peaks were identified according to the logarithms of R in relation to homogeneous TGA (Sigma). Quantification of the peaks was made by internal normalization, assuming that the detector response was the same for all compounds.

Discrimination of vegetable oils by triacylglycerols evaluation of profile using HPLC/ELSD by: Cunha et al.

Methods:

*The chromatographic separation of the compounds was achieved with a Kromasil 100 C18 (5μm; 250 × 4.6 mm) column from Teknokroma, (Spain) operating at ambient temperature.*

* The eluent used was a gradient of acetone (A) and acetonitrile (B).
* Elution was performed at a solvent flow rate of 1 mL/min with a linear gradient as follows:
  + 0 min 30% B,
  + 20 min 25% B,
  + 35 min 20% B,
* keeping these conditions during 20 min and returning to the initial conditions within 3 min.
* The effluent was monitored with an ELSD detector, with the following settings:
  + evaporator temperature 40 °C,
  + air pressure 3.5 bar and
  + photomultiplier sensitivity 6.

Quantitative Analysis of Triglycerides Using Atmospheric Pressure Chemical Ionization-Mass Spectrometry by: Wm. Craig Byrdwell et al

Method:

* Separations of the synthetic randomized mixture of heterogeneous TG and of the randomized and normal SBO and lard samples were accomplished using gradient elution as follows:
  + initial--ACN/DCM (65:35, vol/vol);
  + linear from 20 to 25 min to ACN/DCM (60:40, vol/vol), held until 35 min;
  + linear from 35 to 40 rain to ACN/DCM (55:45, vol/vol), held until 50 min;
  + linear from 50 to 60 min to ACN/DCM (55:45, vol/vol), held until 85 min
  + 5 uL of each sample solution was injected.
* The column effluent was split so that -850 mL/min went to an ELSD and -150 uL/min went to the APCI interface.
  + The ELSD was an ELSD MKIII (Varex, Burtonsville, MD). The drift tube was set at 140C the gas flow was 2.0 standard liters per minute. High purity N 2 was used as the nebulizer gas.

Comparison of HPLC and GLC Techniques for the Determination of the Triglyceride Profile of Cocoa Butter by: Manuela Buchgraber et al.

Method:

*Triglycerides were separated by either (i) a 150 x 4.6 mm Chromsep column packed with 3 ím Spherisorb ODS-2 (Chrompack) or (ii) one or two 250 x 4.6 mm, 5 um Hypersil ODS columns (Hypersil, Runcorn, U.K.) operated in series at 30 °C. A Waters 625 LC system controlled by the Millennium 2010 Chromatography Manager (Waters SpA, Milan, Italy) was used.*

* Samples of 10 uL (5 mg/mL chloroform) were injected by a Gilson 231 autosampling injector (Gilson Italia srl, Milan, Italy).
  + The effluent was monitored by an ELSDMKIIA (Varex, Burtonsville, MA).
* The temperature of the drift tube was set to 100 °C, and a stream of N2 was regulated so as to read 40 mm on the flow meter.
* Acetonitrile/dichloromethane (70:30) was the mobile phase for isocratic TG separations;
  + the same solvents were also used to generate a linear gradient of acetonitrile/dichloromethane (from 80:20 to 46:54) over 60 min.
* Peaks were identified by retention time matching and by reference to retention data published by Podlaha et al. (1984) and Rÿ ezanka and Maresˇ (1991). Quantitation was by area normalization.