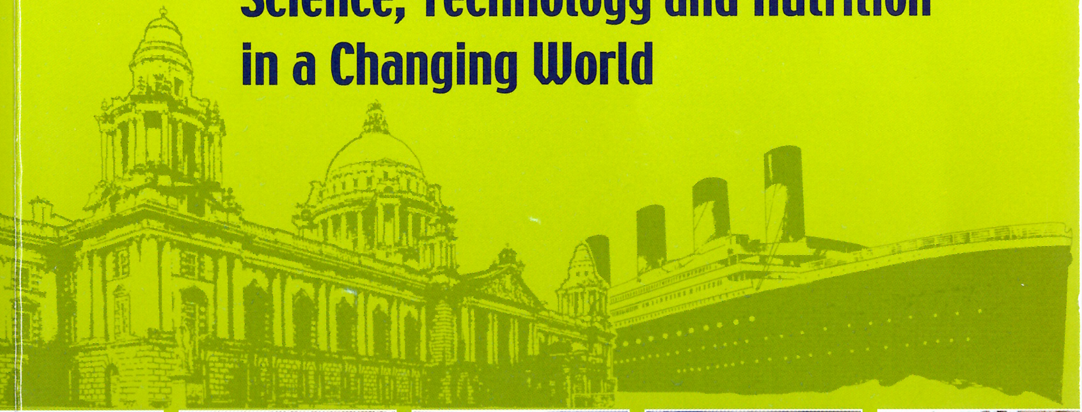
16th Euro Fed Lipid Congress and Expo

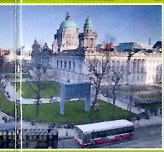
16–19 September 2018
Belfast · UK

hosted by SCI Lipid Group
SCI
where science meets business

FATS, OILS AND LIPIDS:

Science, Technology and Nutrition in a Changing World





BOOK OF ABSTRACTS

www.eurofedlipid.org/meetings/belfast2018

Seasonal Variation in Fatty Acid Content and Composition of the Morphological Fractions of *Cistus ladanifer* L.

S. P. Alves[1], L. Cachucho[2], D. Soldado[2], O. Guerreiro[1,2], R. J. B. Bessa[1], E. Jerónimo[2,3]

[1]CIISA - Faculdade de Medicina Veterinária, Universidade de Lisboa, Lisboa, Portugal

[2]Centro de Biotecnologia Agrícola e Agro-Alimentar do Alentejo/IPBeja, Beja, Portugal

[3]ICAAM - Universidade de Évora, Évora, Portugal

The *Cistus ladanifer* L. (CL) is a shrub from Cistaceae family, widespread in Mediterranean countries. It was previously reported the seasonal variation in the fatty acid (FA) content and composition of aerial part of CL, where two methyl branched chain fatty acids (BCFAs) – the iso-19:0 and iso-21:0, were identified for the first time in shrubs. However, as far as we know, there is no information on FA content and composition of different morphological fractions of CL, as well as on its seasonal variation and if the BCFAs are present in all plant fractions or not. Thus, throughout a full year, were collected CL plants in order to assess the FA content and composition of different morphological plant fractions (leaves, stems, flower buds, flowers and seed heads). Samples were harvested in southern Portugal, with three collections in each season (winter, spring, summer and autumn). At each collection, each morphological fraction from 6 plants was pooled. Fatty acid methyl esters were prepared and analyzed by gas chromatography. The FA content of stems and flower buds did not change over seasons (3.46 and 11.9 mg/g dry matter (DM), respectively). Leaves showed lower FA content during spring and summer than in winter and autumn ($P = 0.037$; 13.6 vs. 17.3 mg/g DM), and seed heads tended to had lower FA content in winter than during summer and autumn ($P = 0.065$; 9.47 vs. 22.5 mg/g DM). The FA content of flowers was 14.6 mg/g DM. The FA composition of leaves varied throughout seasons, while in other CL morphological fractions the FA composition was more stable. Saturated fatty acids represent 61-67% and 72-79% of total FAs in leaves and stems, respectively; composed mainly by 20:0 in leaves and 20:0 and 22:0 in stems. The 18:2n-6 were the major FA present in flower buds, flowers and seed heads. Iso-21:0 was only identified in leaves (0.29-0.73 mg/g DM), and iso-19:0 was found mainly in leaves (0.28-0.50 mg/g DM) and in residual levels in stems, flower buds and flowers, but not in seed heads.

1. Guerreiro O, Alves SP, Duarte MF, Bessa RJB, Jerónimo E, 2015. *Lipids*, 50:493–501.

Financial support from the Alentejo2020 program through the FEDER to project CistusRumen (ALT20-03-0145-FEDER-000023) are greatly acknowledge, as well as financial support from the Fundação para a Ciência e a Tecnologia (FCT) through the grant SFRH/BPD/76836/2011 and research project UID/CVT/00276/2013.