



P16. Sterol and fatty acid profile in negrinha and santulhana varietal olive oils from Trás-os-Montes region

RODRÍGUEZ-ALCALÁ, L., M.¹, PIMENTEL, L.¹, MACHADO, M.¹, CORREIA, I.¹, PEREIRA, J., A.², GOMES, A., M.¹ & PINTADO, M.¹*

¹Universidade Católica Portuguesa, CBQF, Escola Superior de Biotecnologia, Porto, Portugal; ²REQUIMTE-LAQV, School of Agriculture, Polytechnic Institute of Bragança, Portugal

* mpintado@porto.ucp.pt

ABSTRACT

Olive oil is highly appreciated by consumers for both organoleptic (e.g. taste/flavour) and technological properties (i.e. cooking). Furthermore, several studies have reported that this product promotes human health through anti-inflammatory, antiarrhythmic and vasodilatory effects [1]. Two sets of lipids are associated to such effects: phytoosterols [2] and oleic acid [3]. On the other hand, studies carried out in humans have concluded that polyphenols from extra virgin olive oil can reduce inflammatory biomarkers related to atherosclerosis [4].

The Portuguese region of Trás-os-Montes is the second most important producer (170472 hL in 2017) in this country. However, sterol and fatty acid composition of these olive oils have not been fully characterized already. Such studies would help increase the value of these olive oils and identify those with potentially beneficial cardiovascular effects.

Accordingly, Negrinha or Santulhana monovarietal olive oils were collected in duplicate, directly from various local olive mills. Sterols were analyzed as TMS derivatives [5] while fatty acids from esterified and free fractions were as FAME according to Pimentel et al. [6].

Total sterol content in Negrinha samples ranged from 13.79 µg/mg to 15.15 µg/mg while in Santulhana, concentration was 14.31-17.81 µg/mg. As expected, in this moiety, the main compound was β-sitosterol. Regarding fatty acids, oleic acid was the main compound in both free (57.73-109.78 µg/mg Negrinha olive oil and 44.36-79.22 µg/mg Santulhana olive oil) and esterified fractions (748.54-829.80 µg/mg and 684.38-742.26 µg/mg respectively). The results revealed a healthy lipid profile but influenced by variety and mill.

KEYWORDS: Olive oil, Fatty acids, Sterols, Trás-os-Montes region, Valorization