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Department of Plant Protection
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CIHEAM - IAM.B
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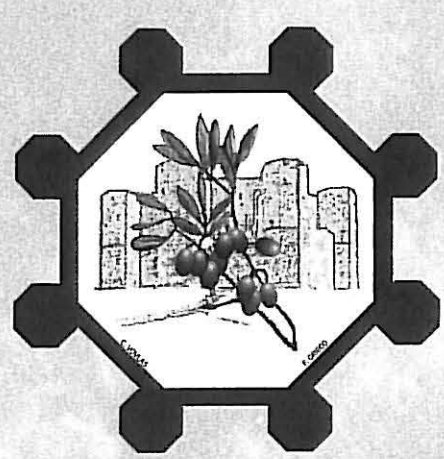

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4 - 58 - DISCRIMINATION OF VARIETAL OLIVE OILS OF THE PORTUGUESE CVS *COBRANÇOSA, MADURAL* AND *VERDEAL* BASED ON THEIR FATTY ACID COMPOSITION

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The fatty acid composition has traditionally been used to discriminate the different vegetable oils and to confirm their authenticity. The aim of the present study was to check the possible use of fatty acid profile to differentiate varietal olive oils of the three most important cultivars in the north-eastern area of Portugal (Cobrançosa, Madural and Verdeal). Fifteen varietal olive oils from each of the three varieties were collected to achieve that goal.
Fatty acids were determined, as methylesters, by HRGC. Methylesters were prepared by transesterefication with BF_3/methanol, after saponification with methanolic KOH. The fatty acid pattern was determined by a Chrompack CP9001 chromatograph equipped with a split-splitless injector, a FID and a 50m x 0,25 mm i.d. fused silica capillary column, coated with a 0,19μm film of CP-Sil88 (Chrompack). The temperatures of injector, detector and oven were 230°, 250° and 185°C, respectively.
The results, as shown by two-way Anova techniques, demonstrate that C16:1*c*, C18, C18:1*c*, C18:2*cc*, and C18:3*ccc* can be used to discriminate the origin of each of the three olive oils; moreover, the others fatty acids existing in small amounts are also good discriminants as demonstrated by traditional variety analysis and discriminant analysis.

Key words: varietal olive oil, fatty acid profile, discriminant analysis