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Occurrence of 3-MCPD, 2-MCPD and glycidyl esters in extra virgin olive oils, olive oils and oil blends and correlation with identity and quality parameters



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1 **Occurrence of 3-MCPD, 2-MCPD and glycidyl esters in extra virgin olive oils,**
2 **olive oils and oil blends and correlation with identity and quality parameters**

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Abstract

14 3-MCPDE (3-monochloropropane-1,2-diol esters), 2-MCPDE (2-
15 monochloropropane-1,3-diol esters) and GE (glycidyl esters) are heat-induced
16 contaminants that are formed during the refining of vegetable oils under high
17 temperatures, mainly during the deodorization step. Samples commercialized as
18 extra virgin olive oils (EVOO), olive oils and oil blends (n = 76) were analysed for 3-
19 MCPDE, 2-MCPDE and GE. A possible correlation with the identity and quality
20 parameters established for olive oils was also evaluated. Concentrations of 3-
21 MCPDE, 2-MCPDE and GE ranged from not detected to 1.16 mg/kg, not detected to
22 0.58 mg/kg and not detected to 1.98 mg/kg in EVOO, respectively. Samples
23 commercialized as olive oil presented levels ranging from 0.28 to 3.77 mg/kg for 3-
24 MCPDE, 0.17 to 1.91 mg/kg for 2-MCPDE and not detected to 1.88 mg/kg for GE.
25 For oil blends, 3-MCPDE levels were from 0.18 to 0.61 mg/kg, 2-MCPDE were from

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