

Mid-IR in the Monitoring of Changes Occurring in VOO in the Course of Early Stages of Autoxidation

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The aim of the present study is the exploitation of information obtained by Mid-IR (FT) with the aid of an Attenuated Total Reflectance (ATR) accessory in the course of early stages of VOO autoxidation. Eleven (11) Cretan VOO (Sitia, Lasithion) obtained directly from olive mills were stored in the dark (25°C) for 12 months. Measurements of free acidity, wax values, total sterols, OSI values, K_{232} and K_{270} indices and FTIR spectra were obtained periodically (0, 6 and 12 months). After twelve months all of the samples official quality criteria were in line with requirements of EC Regulation (1989/2003) whereas OSI values indicated a significant loss in stability. FTIR results show that useful information for the aim of the study could be obtained in the area of 3006, 1746, 1654, and 1163 cm^{-1} . In particular, calculated values of ratios A_{2853}/A_{3006} (<6,1), and A_{2853}/A_{1746} (<0,62), were found to be more promising for monitoring changes in VOOs spectra in the early stages of autoxidation. Nevertheless this needs further investigation.