

# **Sterol Profiles of Memecik (cV) Cultivar Virgin Olive Oils Produced in Milas and Bodrum (Muğla – Türkiye) Districts**

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Olive cultivation and olive oil production has been carried out since ancient times in Milas and Bodrum (Mugla) districts, which are important historical settlements of the Ancient Carian Civilization. Milas olive oil, under its own name, is an agro-industrial product having national (TPI Geographical Indication since on 24/06/2014 by Milas Chamber of Commerce and Industry) and international (EU Geographical Indication – the first and only Turkish olive oil recognized by the EU since 23/12/2020) recognition product. Milas and Bodrum natural olive oils are also important in terms of history, culture, tourism and gastronomy. In this study, commercial and domestic virgin olive oil samples produced by the three-phase continuous system from Memecik variety olives, a single variety (monocultivar), grown in 12 different locations (n = 12) in Milas and Bodrum districts (Muğla) at the 2020-21 harvest year (during October-November) were analyzed based on sterol fractions (an official capillary GC method,). Sterols, the major components of the unsaponifiable fraction of olive oil and also other all fats and oils, are an important nutritional property (the reduction of reactive oxygen species produced by regulating enzymes and inflammatory effects) and authenticity parameter (for checking adulteration with cheaper oils).The sterol composition of Memecik oils in Milas and Bodrum locations consisted of mainly beta-sitosterol (Milas:86.80- 90.70% and Bodrum:86.90 – 88.70), D5-avenasterol (Milas:2.00 – 3.90 % and Bodrum: 2.7 – 4.7%) and campesterol (Milas:3.00 – 3.39% and Bodrum: 2.7 – 3.4%.The total B-sterol values in Bodrum Memecik oil samples were between 93.03 – 94.60 % while there was a slight increase for Milas oils from 93.68 to 94.50%. Total sterol content of Memecik olive oils of Milas decreased from 1099.3 to 1654.6 mg/kg while there was a remarkable increase in Bodrum Memecik oil samples from 2075.6 to 2429.37 mg/kg. The sterol compositions can be used for identification of Memecik olive oils with regard to authenticity and local classification based on chemometrics.

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