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MEETING ABSTRACT OP

Olive hybridization studies in Türkiye: Evaluation on findings from oily olive hybrids (2005–2025)

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Abstract: In the early 1990's, a controlled cross breeding project was started on Turkish domestic (Memecik, Gemlik, Uslu and Ayvalık)/some registered foreign (Gordal and Manzanilla) olive cultivars by the Research Institute for Olive Culture, Bornova–Izmir, Turkey. A collection orchard for cross breeding olives (containing approximately 3000 hybrid individuals) was established on propagation area of the research institute in Kemalpaşa–Izmir in 1990. The main objective of this project was to develop new olive genotypes with desirable agronomic characteristics and high-quality properties for the oil and table olive industries, from economically important registered domestic oily and table olive (and some foreign) cultivars. Within the scope of this project, basic quality analysis (free fatty acid, peroxide value, the UV absorption values in K232 nm and K270 nm), total chlorophyll, total polyphenol, fatty acids and triacyl glycerol profiles and sensory properties (panel test) of olive hybrid oils from four different combinations were analyzed during 2005–2024 crop years. This study have been reviewed the findings obtained from four different hybrid combinations. The analytical results of oil samples evaluated in terms of agronomic (maturation–regular yield), technological (high total polyphenol and oxidative stability, high oleic–low linoleic acid) and desirable high sensorial properties (high fruity and well-balanced pungent and bitterness aroma by official panel test) for olive producing technology. First combination (2005–2008): Memecik (oily) and Gemlik (table+ oily) from domestic cultivars. Totally 11 hybrid individuals were obtained. GM19 (Arsel-table olive) and MG 5 (Hayat-oil olive) olive hybrids were officillay registered as first domestic hybrids by the Turkish Ministry of Agriculture and Forestry in 2015 and 2019. Second combination (2011–2015): Memecik (oily) and Uslu (table + oily) from domestic cultivars. Of the totally 13 hybrid individuals, two (UM30 and MU83) showed promising characteristics. Third combination (2015–2019): Domestic (Ayvalık, Uslu and Gemlik) and foreign (Manzanilla and Gordal) cultivars. Of totally 9 hybrids, four samples (Ma x Ay 5, Ma x Us 32, Ma x Us 53 and Ge x Go 42) were leading as new hybrid olive candidates. Fourth combination (2021–2024): Turkish olive cultivar Ayvalık (oily) and among the totally 7 hybrid individuals, two (AyXAy3 and AyXAy8) showed the most hopeful promising oil characteristics.

Keywords: Türkiye, olive cultivar, cross breeding, olive oil, quality improvement

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