

# **The Effect of Irrigation on the Oil Composition of Some East Mediterranean Olive Cultivars**

Aslı Yorulmaz<sup>1</sup>, Hakan Erinc<sup>2</sup>, Abidin Tatlı<sup>3</sup>, Aziz Tekin<sup>2</sup>

<sup>1</sup> Food Engineering Department, Adnan Menderes University, Aydın, Turkey

<sup>2</sup> Food Engineering Department, Ankara University, Ankara, Turkey

<sup>3</sup> Agricultural Combat Research Institute, Adana, Turkey

The objective of this study is to investigate the effect of irrigation on olive and olive oil composition. For this purpose, four different East Mediterranean olive cultivars 'Kilis yağlık', 'Nizip yağlık', 'Halhali', 'Karamani' were harvested from trickle irrigated and non irrigated orchards at the end of November 2008. Olives were processed to oil using a laboratory mill and decantor, olive and oil samples were then subjected to analyses.

Results have shown that irrigation raised pulp/pit ratio but reduced dry matter and oil content of olives. Quality parameters like acidity, peroxide and  $K_{232}$  values ascended by irrigation, except for Nizip yağlık cultivar. Trickle irrigation tended to have the same effects on oil compositions of cultivars excluding Nizip yağlık. Oleic acid and triolein percentages were found lower but linoleic acid, trilinolein,  $\Delta$ -7-stigmastenol percentages and total sterol contents were found higher for oils obtained from 'Karamani', 'Kilis yağlık' and 'Halhali' cultivars which were obtained from irrigated orchards. It can be stated that irrigation had very little effects on phenolic structures of olives and oils except luteolin contents of oil samples which were lower for irrigated cultivars excluding Nizip yağlık.