

Investigations of Genetic Variation Between Olive (*Olea europaea* L.) Cultivars Using Arbitrarily Primed Polymerase Chain Reaction (AP-PCR)

Feray Kockar^{a*} and Rahsan Ilıkcı^b

^a Balıkesir University, Science-Literature Faculty, Department of Biology, Molecular Biology Section, 10100, Balıkesir/Turkey. Fax: +90 26 62 49 33 60. E-mail: fkockar@balikesir.edu.tr

^b Balıkesir University, Graduate School of Science, Department of Biology, Molecular Biology Section, 10100, Balıkesir/Turkey

* Author for correspondence and reprint requests

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Characterization and selection of olive clones for the production of olive oil is essential in Turkey because of its profitable exploitation. AP-PCR (Arbitrarily-Primed PCR) is a technique that can distinguish the genetic relationship among plant species and other organisms. In this study, AP-PCR approach was used in order to determine the genetic relationship of different six olive clones. The purity of DNA is one of the most important factors affecting the product of the AP-PCR method. In this respect, modified genomic DNA isolation procedure from *Olea europaea* clones was developed so that this procedure can be used to obtain plant genomic DNA from diverse aromatic plants, which produce essential oils and secondary metabolites. By following the optimized AP-PCR amplification protocol, unique DNA fingerprint profiles for each olive clone were produced. AP-PCR-generated unique DNA fingerprint profiles can be used in the identification, distribution and diversity of various olive cultivars.

Key words: AP-PCR, *Olea europaea*, Olive, Turkey