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Assessment of Genetic Stability of Micropropagated Olive (*Olea europaea* L.) Cultivars Using RAPD Marker

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Abstract : Olive (*Oleaeuropaea* L.) cultivars are multiplied by grafting, suckers and cuttings. *In vitro* propagation it may be a good alternative for multiplication. The aim of the work was to evaluate genetic fidelity of three different micropropagated olive cultivars, compared with the donor plants by RAPD-PCR assay. The response of three olive cultivars ('Koroneiki', 'Picual' and 'Manzanillo') to in vitro multiplication was studied by examining different types and concentrations of both 6-Benzylaminopurine (BAP) and 6-(γ,γ-Dimethylallylamino) purine (2ip). The effect of genotypes was obvious ; 'Manzanillo' showed better performance compared with the other cultivars. On the other hand, 5ppm BAP record the highest mean shootnumber (MSN) and mean shoot length (MSL) compared with 2ip. Also, the best mean leaf number (MLN) was obtained when cultured on MS medium supplemented with 5 ppm BAP. Random amplified polymorphic DNA(RAPD) analysis was performed to evaluate the genetic stability of the micropropated plants compared with the donor plants. A total number of six decamer RAPD primers gave 39 distinct and reproducible bands ranging from 90 to 1500 bp. UPGMA dendrogram depend on Jaccard's coefficient illustrating that olive plants regenerated in vitro had highly similarity with the mother plants.
Keywords : Tissue culture, genetic fidelity, molecular marker, genetic distance.

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