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Analysis of polymorphism based on SSCP markers in gamma-irradiated (Co^{60}) grape (*Vitis vinifera*) varieties

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ABSTRACT. The effects of induced mutation produced by five different doses of gamma irradiation (20, 25, 30, 40, and 45 Gy) were determined using molecular approaches in *Vitis vinifera* cultivars, namely Thompson Seedless (Sultani Çekirdeksiz) (progenitor of seedless *vinifera* variety) and Kalecik Karası (one of the best quality wine grape variety of Turkey). Mutant candidates were selected through morphological observations of mutation-induced phenotypic changes during the first, second and third vegetation periods after radiation applications. Amplification studies started with 50 primers (expressed sequence tags) applied to the mutated individuals. Only 15 of these primers revealed polymorphic profiles. Twenty-two candidate mutants of Thompson Seedless and Kalecik Karası, selected based on morphological observations, were analyzed with 15 single-strand conformation polymorphism (SSCP) markers, together with 46 control plants. Polymorphic bands were rarely obtained in the SSCP analysis, and they were not reproducible.

Key words: SSCP; *Vitis vinifera* L.; Mutation; Gamma radiation

