Genetic Stability of Hypotetraploid (2n = 4x − 1 = 75) Grapes Obtained from in vitro Culture

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This study was conducted to investigate the effect of different cytokinins [6-benzyladenine (BA) and Thidiazuron (TDZ)] on multiple shoot regeneration from shoots of ‘Hanareum (2n = 4x − 1 = 75)’ plant and to assess genetic stability in the regenerated plants from the type and concentration of the most suitable cytokinin for its micropropagation.

The most effective hormone for shoot multiplication of ‘Hanareum’ was investigated as 5 uM BA. Approximately 90% of shoots were successfully rooted by incubating the MS medium supplemented with 1 uM IBA. Genetic stability of the regenerated plants was evaluated by chromosome number, flow cytometry and inter-simple sequence repeat marker analyses. From the cytological and molecular analyses, no somaclonal variation was found in any of the regenerated plants obtained on medium containing 5 uM BA and 1 uM IBA for shoot multiplication and root induction stages, respectively. This result suggests that the micropropagation system is also a reliable method for propagation of hypotetraploid grape cultivar with genomic instability. Combining virus-free plant production and micropropagation system for ‘Hanareum (2n = 4x − 1 = 75)’ will enable us to supply high quality grape vines to farmers.