

Title Effect of temperature and accession type on lycopene stability and total phenolic compound of watermelon fresh cut fruit

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Abstract

Enhancement of watermelon germplasm for market traits is one of the major objectives of breeding programs. The purpose of this investigation was to evaluate the rate of lycopene stability and changes in the amount of phenolic compounds of different watermelon accession in storage condition. Five accessions of watermelon cultivar representing hybrid and open-pollination types were harvested from field and stored at different temperature conditions in storage. Descriptive sensory analysis was used to evaluate lycopene, phenol, hue, chroma, lightness and color index at harvest (0 day) and after days 7, 14 and 21 of storage at 0, 4, 12°C temperature. Lycopene, phenol, chroma and other attributes were affected by the variety, temperature and type of accessions. The Iranian watermelon accession during storage indicated less reduction in lycopene amount than *krimsweet*. All accessions showed more stability of lycopene and less amount of total phenolic compound at 4°C. The result of this study demonstrated that cutting and storing of watermelon resulted in lycopene deterioration, however accession type and genetic basis have critical role to improve fruit quality. It is necessary to study and use local accession for breeding works in the future.