

Title Effect of harvest time on quality and storability of table grapes (Cv. Halla)
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Abstract

Italy is one of the largest table grapes producers and most of the production takes place in the Apulia Region. A quite general practice in this area is to keep the bunches on the plant (covering the canopy with plastic material) well after they reach the horticultural maturity. For 'Italia' variety this usually happens from the second half of September. In this way the product can easily reach the Christmas market with no water loss (no stalk desiccation) and no decay (since pre-harvest use of fungicide is allowed). The aim of this work was to evaluate the effect of harvest time (over almost 3 months) on quality and storability of table grapes (cv. Italia) after storage at 0°C. The experiment was repeated for two years (2010 and 2011) changing growing area (Bari and Foggia, Italy). In 2010 grapes were harvested starting from October 8 and after 11, 27, and 48 days. In 2011 5 harvest times were compared: starting on October 7 and after 14, 28, 42, and 56 days. At each harvest time grapes were stored for 28 days in air at 0°C and 95% RH. In 2010, respiration rate, appearance score, color, weight loss, firmness, and sensory attributes (odor, flavour, crunchiness, sweetness, acidity and overall evaluation) were measured at harvest and during storage. In 2011 other sensorial parameters, including resistance to berry detachment, skin peelability, fruity and greenness taste, and astringency of the seeds, were also evaluated. In addition for both years, chemical determinations, such as soluble solids, pH, titrable acidity, total phenol content, and antioxidant activity were carried out at harvest. Time of harvest affected most of the quality parameters for both years. In 2010, harvest time influenced respiration rate, cluster and berry appearance score, color parameters, crunchiness, pH, acidity, total phenol content and antioxidant activity. In 2011, harvest time influenced the respiration rate, color parameters, sensory parameters (except skin peel ability and acidity), TSS and titratable acidity. Most of these differences observed at harvest were maintained during storage. In particular, the grapes harvested at the last harvest time and stored for 28 days showed the highest sensorial quality. In 2010, in fact, the grapes of the last harvest showed higher odor, flavor, crunchiness and TSS, although after 15 days appearance score decreased below the limit of marketability (score 3). In 2011, grapes from all the harvest dates were still marketable after 28 days of cold storage, with small difference among harvest times. The late harvested grapes showed higher firmness, berry appearance score, sweetness, fruity taste, overall sensorial evaluation,

and TSS, even though panelists observed a lower resistance to berry detachment from the peduncle. In conclusion results of these experiments showed that delaying the harvest time could increase sensorial quality of table grapes, but could reduce their storability depending on the year and the field conditions.