

Title Effect of different shading practices used at pre-harvest stage on quality and storage life of Sultana seedless grapes

Author Fatih Sen, Askım Altun, Metin Kesgin, Mustafa Sacid Inan

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Abstract

Grapevine rows are shaded or covered increasingly in Sultana Seedless vineyards to delay maturity and consequently the harvest date. The research work was carried out to test effect of different shading ratios applied prior to covering on grape quality and storage life in 2009 and 2010. Grapevines were covered with 3 different densities (shading ratios: 35%, 55%, and 75%) just before the veraison period (~ June 20). Unshaded (0%) control grapevines and grapevines shaded at different rates were covered with polypropylene cross-stitch at the first week of September. Grapes under tested treatments were harvested 30-40 days after those under open conditions. In 2009, grapes were harvested, packed and taken into storage rooms after 24 h pre-cooling on September 24 and in 2010 on September 22. During packing, grape clusters were placed in PE bags, sulphur dioxide pads put on top, and then bags were sealed. The grapes were kept for 120 days under storage at 0.5°C and 90 % RH. Samples were taken at harvest, and at 60th, 90th and 120th days of storage. Grape quality parameters analyzed were cap-stem removal force (N), skin surface color (CIE L *, a *, b*), water soluble solids content of grape juice (%), titratable acidity content (g tartaric acid/L), pH value, loss rate due to fungal growth and sensory attributes. At the end of the 120 day-storage period, all grape clusters whether shaded or unshaded had fungal growth. At the end of December (90th day), grapes were found healthy and at marketable quality. Water soluble solids content, maturity index and color b* were found lower in shaded grapes compared to unshaded grapevines. Still, cap-stem removal force and titratable acidity content of shaded grapes were higher than the unshaded grapes. While differences between those parameters decrease, at the 90th day of storage, in shaded grapes, water soluble solids content was lower and titratable acidity content was higher leading to delayed maturity. No particular differences were observed between shading ratios.