

Title Quality of 'Italia' grapes from organic and conventional farming at harvest and during storage
Author Maria L. Amodio and Giancarlo Colelli
Citation Abstracts Book, 6th International Postharvest symposium, 8-12 April 2009, Antalya, Turkey.
256 pages.
Keyword Grape; antioxidant; storage

Abstract

This study was aimed to investigate quality at harvest and during storage of organically and conventionally grown 'Italia' grapes, collected from 2 different locations in Southern Italy. Four vineyards were chosen in order to have organic and conventional farm in each location. Before harvesting six plants per vineyard were randomly chosen, representing six replicates of the treatment, and marked in order to monitor the production per plant throughout all the harvesting season. Three bunches were harvested and labelled from each plant. In laboratory each bunch was weighed; then thirty berries per bunch were detached and used for initial determination which included morphological (berry weight and dimension, peel thickness) and physical (berry color and firmness) attributes, maturity indices (respiration rate, soluble solids content and titratable acidity), and nutritional composition (phenol composition, antioxidant activity, sugar and organic acid composition, ascorbic acid content). Following, bunches from each replicate were kept in individual 15-L jars at 0°C and connected to a humidified flow of air for the entire duration of the experiment. After 7 and 14 days of storage, respiration rate, weight loss, physical and nutritional attributes were also monitored on 15 berries per bunch. Location and agricultural practices affected with different extent several grapes quality attributes at harvest and during storage. Maturity stage and berry color were significantly affected by the location, since different farming management was applied within each farm. Plant production and bunch weight were significantly higher for conventionally grown grapes which also received the highest evaluation of external appearance, in terms of stalk dehydration and berry general aspect. Sugar content was also significantly affected by the location, while antioxidant-related compounds were significantly higher in organic grapes. Results showed a higher nutritional value in grapes obtained with the organic farming system although in terms of external appearance and yield performance conventional fruit had a better performance.