Ripening and Storage Time Effects on the Aromatic Profile of New Table Grape Cultivars in Chile

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Abstract
The aim of this study was to determine the volatile profiles of new seedless table grape cultivars Timco™, Magenta™, Krissy™ and Arra15™ and compare them with the traditional table grape variety Crimson seedless. The volatile profiles were extracted employing solid-phase microextraction and analyzed with gas chromatography coupled with mass spectrometry. Terpenes were present in very different proportions, with the Magenta, Krissy, and Arra15 varieties showing much higher quantities than Crimson and Timco. β-Ionone and octanal, important indicators in the aromatic flavor quality of table grapes, were present in higher levels in Crimson and Arra15, and this might be responsible for driving consumer preference. These compounds significantly increased during ripening, except in Crimson, and gradually decreased from harvest to the end of the storage in all the cultivars. Evolution during ripening was different depending on the variety but the general tendency terpenes was to increase from veraison to harvest. A postharvest study revealed that Crimson could have a better conservation of the volatile components during postharvest storage compared with Timco and Krissy. These results could help in plant breeding programs and to make decisions for new planting according to needs for storing fresh table grapes given distances to consumer markets.

Author keywords
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