

Title Modified atmosphere packaging of yellow and purple plum cultivars. 2. Effect on bioactive compounds and antioxidant activity

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Abstract

Changes in bioactive compounds (total phenolics and total carotenoids, and individual anthocyanins) as well as total antioxidant activity (TAA) in separate fractions; hydrophilic (H-TAA) and lipophilic (L-TAA), in the peel and the flesh of 2 purple and 2 yellow skin plum cultivars under modified atmosphere packaging (MAP) conditions, using two films with different gas permeability, were studied. Results revealed that in all cultivars, total phenolics and H-TAA increased in the peel and flesh during storage, as well as the two identified anthocyanins: cyanidin-3-glucoside and cyanidin-3-rutinoside in the purple cultivars. These changes were significantly delayed in fruit stored under MAP conditions. Total carotenoids and L-TAA increased in the yellow cultivars (in both peel and flesh) while decreases were observed in the purple cultivars, these changes also being delayed by the use of MAP. Positive correlations were found between H-TAA and total phenolics and between L-TAA and total carotenoids.