Maturity stages and MAP affect the quality attributes and bioactive compounds of cornelian cherry fruit (*Cornus mas* L.) during cold storage

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Abstract

The present research was conducted to investigate the influence of the harvest maturity stages and modified atmosphere packaging (MAP) on quality of cornelian cherry fruit. The cornelian cherry fruit (*Cornus mas* L.) were used as the plant materials in this study. Weight loss of MAP-treated fruit was lower than the untreated. At harvest and end of the storage, the greatest respiration and ethylene production rates were measured from M-1. MAP-treated fruit were maintained firmness and had lower decay. At the end of the storage, the greatest soluble solids and acidity were obtained from M-2. Also, vitamin C contents of M-1+MAP were greater than M-1, M-2 and M-2+MAP. At harvest and on 15^{th}, 30^{th} and 45^{th} day of the storage, anthocyanin of M-2 was greater than M-1. At the last two periods of the storage, flavonoid contents of MAP-treated fruit were greater than the untreated. During the storage, M-2+MAP had greater phenolic contents than the other. The greatest antioxidant activity at the end of the storage period was measured in M-1+MAP. Cornelian cherry fruit are quite rich in anthocyanins, flavonoids, flavonols, phenolic acids and vitamins. The fruit should be harvested at proper maturity stages because of short harvest and marketing periods. Based on present findings for a prolong storage and shelf life the cornelian cherry fruit should be harvested at M-1 stage and fruit should be cold-stored in MAP.