Title Changes in carotenoid pigments in paprika (*Capsicum annuum* L.) influenced by temperature and moisture content

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Abstract

Introduction: Paprika (*Capsicum annuum* L.), is one of the oldest, most important, and widely used food colorants because of its high carotenoid content. Carotenoids have always been of great interest due to their biological properties and red coloring. It is also well-known that both the pungency and aroma of paprika dictate consumer preference. Storage conditions such as moisture level and temperature affect the degree of loss of carotenoids during the storage period. **Materials and Methods:** Change of the extractable color compounds of the paprika, stored at three different temperatures (30, 50, and 70°C) and water activities (0.5, 0.6, and 0.7) was investigated. Extractable red and yellow carotenoid fractions are determined by UV spectrometer. **Results and Discussion:** The increase in temperature and the decrease in water activity during storage resulted in significant ($p<0.01$) decreases in the total carotenoid content of the samples. The initial amounts of the total red carotenoid and the total yellow carotenoid fractions of the paprika was found between 1819-1837 mg/kg and 883-902 mg/kg, respectively. Depending upon the storage period, the amount of the total extractable red carotenoids decreased by 25%. Moreover, degradation of the total extractable yellow carotenoids increased with the decrease in the water activity at high temperatures (50 and 70°C). The samples stored at a water activity of 0.5 had the lowest contents of the total extractable red and yellow carotenoids.