

Osmotic dehydration of apple and pear slices: color and chemical characteristics

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Abstract. Osmotic dehydration is the pre-treatment method of preservation the fruits and vegetables to increase their shelf life. This method consists of immersing fruits and vegetables in concentrated solutions of salt or sugar. The effect of osmotic dehydration was investigated on the color and chemical characteristics of dehydrated fruits (apple and pear) in fructose osmotic solutions. Difference in CIE-LAB, chroma - C^* and hue angle H^* were performed with a Chroma Meter CR-400/410. Apple (*Malus domestica 'Jonathan'*) and sweet autumn pear variety (*Pyrus comunis*) were osmotically dehydrated in three aqueous solution of fructose (40, 60 and 80%), during 3 h of process at temperatures of 20 °C, with fruit/osmotic agent ratio of 2:1. Water loss and solids gain showed significant differences depending on the concentration of the osmotic agent and process time. The use of highly concentrated osmotic solutions induced losses of phenolic content (TPC) and ascorbic acid in the sliced apples and pears. Fructose concentration and osmosis time induce significant increase of a^* and b^* colorimetric parameters but did not affect the lightness (L^*) of pear slices.

Keywords: osmotic dehydration; apple; pear; color; polyphenols.

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