

## Osmotic Dehydration of Fruit Slices in Concentrated Sugar Solution

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**Abstract :** Enriched fruits by minerals provide minerals which are needed to human body the minerals are used by body cells for daily activities. This paper indicates the result of mass transfer in fruit slices in 55% sucrose syrup in presence of calcium and phosphorus ions. Osmosis agent 55% (w/w) was prepared by solving sucrose in deionized water and adding calcium or phosphorus in 1 and 2% concentration. Dry matter, solid gain, water loss as well as weight reduction were calculated. Results showed that by increasing of calcium concentration in osmosis solution solid gain, water loss and weight reduction were increased in short experiment time in kiwi fruit but the parameters decreased in long experiment time by concentration increasing and rise of calcium concentration caused decrease of osmosis parameters in banana. In the case of phosphorus, increasing of ion concentration had adverse effect on all treatments, this may be due to different osmosis force that is created by two types of ions. The mentioned parameters decreased in all treatments by increasing of ion concentration. Highest mass transfer in kiwi fruit occurs when 1% calcium solution applied for 60 minutes, values obtained for solid gain, water loss and weight reduction were 42.60, 51.97, and 9.37 respectively. In the case of banana, when 2% phosphorus concentration was applied as osmosis agent for 60 minutes highest values for solid gain, water loss and weight reduction obtained as 21, 25.84, and 4.84 respectively.

**Keywords :** calcium, concentration, osmotic dehydration, phosphorus

**Conference Title :** ICFAE 2014 : International Conference on Food and Agricultural Engineering

**Conference Location :** Cape Town, South Africa

**Conference Dates :** November 20-21, 2014