

Effect of Different Concentrations of Sugar Solution on Aloe Vera Cubes During Osmotic Dehydration

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ABSTRACT

The study was to investigate the effect of different concentrations of sugar solution on aloe vera cubes during osmotic dehydration. The osmotic dehydration of aloe vera cubes was done in solutions of different sugar concentrations (30°, 40°, and 50 °Brix) for a period of 4 h. The data was analyzed for determining the water loss, solid gain, and weight reduction and finally optimized to give a maximum water loss, weight reduction, and solute gain. Within the experimental range of the independent variables studied, the following conclusions were drawn. The water loss was observed more at 50° (81.33%) compared to 40° (73.33%) and 30° (71.54%) Brix sugar concentrations. The solid gain was observed more at 50°Brix sugar concentration (11.83%) compared to 40 °Brix (10.81%) and 30 °Brix (10.8%) sugar concentrations. The weight reduction was increased from 25 to 60.76%, 30 to 62.52%, and 40 to 69.5% for 30°, 40°, and 50 °Brix sugar concentration solutions, at 4h process duration of osmosis. It was concluded that the osmotic dehydrated aloe vera cubes was best at 50 °Brix of sugar concentration.

Key words: Aloevera, Solid gain, Osmotic dehydration, Water loss, Weight reduction.