Title Mathematical modeling of mass transfer in osmotic dehydration of lychee cv. Chakrapud

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Abstract

The study on osmotic dehydration of lychee cv. Chakrapud was carried out to remove the moisture in three syrup concentration levels (50 °Brix , 60 °Brix and 70 °Brix) at temperature 25 °C. A two-parameter mathematical model developed by Azuara et al. was used for describing the mass transfer in osmotic dehydration of lychee. The effect of time on mass transfer kinetics was investigated and the constants of two-parameter model and final equilibrium points for moisture loss as well as solid gain were found. The effect of solution concentration was also studied and it was found that equilibrium moisture loss and solid gain are related to solution concentration. The optimum conditions of osmotic dehydration for further drying were found to be 60 °Brix syrup concentration and 1-h of osmosis.