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Mass transfer kinetics model of osmotic dehydration of pineapple

Kaleemullah Shaik
Acharya NG Ranga Agricultural University, India

The study on osmotic dehydration of pineapple rings of 1.5 cm thick and 9 cm diameter was carried out in a sample of sugar solution maintaining the solid to liquid mass ratio of 1:5. The observations on moisture loss and solids gain of the pineapple rings were recorded at an interval of 30 min for the experiments conducted at three sugar concentration levels (50, 60 and 70°B) and four temperature levels (32, 40, 50 and 60°C) of osmotic solution. A two-parameter mathematical model was used to describe the mass transfer kinetics of osmotic dehydration of pineapple rings. The effect of time on mass transfer kinetics was investigated and the constants of two-parameter model and final equilibrium points for moisture loss and solids gain were determined. The effect of solution concentration and solution temperature was also studied and was found that equilibrium moisture loss and equilibrium solids gain are related to solution concentration and solution temperature, logarithmically. The experimental values of moisture loss and solids gain were found to be very close to the predicted values with root mean square deviation of 2.43-8.12% and 3.39-5.43% respectively.

Biography

S. Kaleemullah has completed Ph.D from Tamil Nadu Agricultural University, India. He is working as Associate Professor at College of Food Science and Technology. He published 24 research articles in national and International Journals of repute and 50 popular articles in magazines and News Papers. He received meritorious teacher award, best Ph.D thesis award by Indian National Academy of Engineering, Commendation medal of Indian Society of Agricultural Engineers. Dr.Kaleemullah is a referee to 9 Journals. During his tenure as Associate Dean, he was deeply involved in establishing infrastructure to run B.Tech.(Food Technology) programme.

drkaleems@yahoo.co.in