

The Use of Performance Indicators for Evaluating Models of Drying Jackfruit (*Artocarpus heterophyllus* L.): Page, Midilli, and Lewis

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Abstract : Mathematical models of drying are used for the purpose of understanding the drying process in order to determine important parameters for design and operation of the dryer. The jackfruit is a fruit with high consumption in the Northeast and perishability. It is necessary to apply techniques to improve their conservation for longer in order to diffuse it by regions with low consumption. This study aimed to analyse several mathematical models (Page, Lewis, and Midilli) to indicate one that best fits the conditions of convective drying process using performance indicators associated with each model: accuracy (Af) and noise factors (Bf), mean square error (RMSE) and standard error of prediction (% SEP). Jackfruit drying was carried out in convective type tray dryer at a temperature of 50°C for 9 hours. It is observed that the model Midilli was more accurate with Af: 1.39, Bf: 1.33, RMSE: 0.01%, and SEP: 5.34. However, the use of the Model Midilli is not appropriate for purposes of control process due to need four tuning parameters. With the performance indicators used in this paper, the Page model showed similar results with only two parameters. It is concluded that the best correlation between the experimental and estimated data is given by the Page's model.

Keywords : drying, models, jackfruit, biotechnology

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