

Kajian dan Pemodelan Kinetika Pengeringan Lapis Tunggal (*Moisture Ratio-effective Moisture Diffusivity*) dan Analisis Eksergi Pada Proses Pengeringan Kerupuk Mawar Menggunakan *Food Dehydrator*
(*Study and Modeling of Moisture Ratio-effective Moisture Diffusivity Kinetics and Exergy Analysis on the Drying Process of Rose Crackers Using Food Dehydrator*)

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ABSTRACT

Rose crackers are a traditional food product widely produced by mall – scale industries in Indonesia. The drying process is a critical step in production prior to frying, as moisture content affects the final product, quality stability, shelf life, and the crispness and expansion characteristics of the product, particularly in the case of crackers. This study aims to evaluate the drying characteristics of rose crackers using a food dehydrator at temperatures of 60°C, 70°C, and 80°C through a single-layer drying kinetics approach, as well as to evaluate process efficiency via exergy analysis. The drying data were analyzed using nine mathematical models to determine the best model based on the coefficient of determination (R^2), sum of squared errors (SSE), and root mean square error (RMSE). The results indicate that the Diffusion Approach model is the most suitable for describing the characteristics of rose crackers across all temperature variations. Exergy analysis showed that exergy efficiency ranged from 12% to 18%, indicating that the food dehydrator has a low efficiency level.

Keywords: food dehydrator, rose crackers, exergy, kinetic, drying