

***Experimental Study and Mathematical Model of the Kinetics of the Thin Layer  
Drying Process of Sweet Potato***  
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***ABSTRACT***

*Drying is the process of reducing the moisture content of a material to a certain level, making it resistant to microorganism attack. Broadly, drying is the process that occurs directly through the transfer of heat from the drying air to the material being dried, resulting in the evaporation of moisture from the material. The objective of the research is to find the most suitable mathematical model for replicating the kinetics of the drying process and to determine the effective moisture diffusivity ( $Deff$ ). In the microwave drying process. The data obtained from the drying process will be tested using 10 mathematical models for the kinetics of thin-layer drying of purple sweet potatoes. Analysis will be conducted on the coefficient of determination ( $R^2$ ), sum of squared errors (SSE), and root mean square error (RMSE). Evaluation of the mathematical kinetic models for the thin-layer drying process of sweet potatoes shows that the best replication for M1 is the polynomial model, for M2 is the Page model, and for M3 is the Weibull model. The highest  $Deff$  value is observed in M3.*

***Keywords:*** Purple sweet potato, Drying kinetics, Mathematical models