

3rd International Conference and Exhibition on **Food Processing & Technology** July 21-23, 2014 Hampton Inn Tropicana, Las Vegas, USA

Modeling the drying and sorption behavior of yam (*Dioscoreaceae rotundata*)

Emmanuel Amankwah Amankwah^{1,2}, K A Dzisi², G van Straten² and A J B van Boxtel¹

¹Wageningen University, The Netherlands

²Kwame Nkrumah University of Science and Technology, Ghana

Drying experiments on a pilot scale air dryer in the temperature range 30°C–500°C and sorption isotherms at 25 and 50 of yam (*D. rotundata*, *Dente*) cuts were investigated. Drying empirical models were fitted to the experimental drying and sorption datas. The Henderson and Pabis model fitted well the experimental drying data while the GAB model fitted well the desorption data. The drying rate, showed strong relationship with temperature. By ignoring shrinkage effective moisture diffusivity ranged between 2.29×10^{-11} – 6.65×10^{-11} while activation energy was recorded as 44.06 kJ/mol. Diffusivity was observed to be a function of temperature.

Biography

Emmanuel Amankwah Amankwah is presently a PhD student at the Wageningen University Research Center, The Netherlands and a Lecturer at the Kwame Nkrumah University of Science and Technology, Ghana. He has published more than 10 papers in reputed journals and currently working on his final thesis.

emmanuel.amankwah@wur.nl