Mathematical modeling evaluation for convective hot air drying of poultry meat

■ **JAVEED AKHTAR AND P.K. OMRE**

See end of the Paper for authors' affiliation

Correspondence to :

JAVEED AKHTAR
Department of Post Harvest Process and Food Endineering, College of Technology, G.B. Pant University of Agriculture and Technology, Pantnagar, U.S. NAGAR (UTTARAKHAND) INDIA
Email : er.jakhtar@gmail.com

■ **ABSTRACT :** The aim of this study is to determine drying behaviour of different two type chicken meat samples at five temperatures (45, 55, 65, 75 and 85 °C), five air velocities (2.5, 3.5, 4.5, 5.5 and 6.5 m/s) and three thicknesses (1 cm^3, 1.5cm^3 and 2 cm^3) in high velocity hot air dryer for manufacturing of dried chicken meat product. Only falling-rate period was observed for both of the dried meat samples. The five empirical models namely page's, Logarithmic, Exponential, two term exponential and Henderson and Pabis were fitted to experimental moisture ratio data. These models were tested in MATLAB software version R2013a using curve-fitting tool box with nonlinear method of Levenberg-Marquartd algorithm. Performance of five drying models was evaluated on the basis of co-efficient of determination (R^2), standard error estimation (SEE) and root mean square error (RMSE)by using nonlinear regression analysis. Page's model gave better prediction for moisture ratio.