عنوان مقاله:

ANN model for effective diffusion coefficient of water loss in osmotic dehydration of geen bean

محل انتشار:

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خلاصه مقاله:

The aim of this paper is to examine if artificial neural networks (ANNs) can predict effective diffusion coefficient (De) of water loss in cylindrical cut green beans at atmospheric pressure. Themost suitable algorithm with appropriate number of neurons in the hidden layer which provides the minimum error is found to be the Levenberg–Marquardt (LM) algorithm. ANN's results showed the best estimation performance for the prediction of De. The required data were collectedand after pre-treating was used for training of ANN. The performance of the best obtained network was checked by its generalization ability in predicting 20% of the unseen data and a network with tansig training algorithm was found as the best architecture. Excellent predictions with maximummean relative error (MRE) of 0.03, mean square error (MSE) of 9.66e-23, coefficient of determination (R2) of 0.98, and regression coefficient (R) of 0.99047 were observed. Among the various transfer function, tansig training algorithm was found as the best architecture

کلمات کلیدی:

green beans; Diffusion coefficient; Osmotic dehydration; neural network

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