MODELING OF A HOT AIR DRYING PROCESS BY USING ARTIFICIAL NEURAL NETWORK METHOD

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ABSTRACT

In this study, firstly, experimental drying behavior of polyester yarn bobbin was determined under different drying conditions, then a suitable artificial neural networks model, simulating polyester yarn drying process, have been revealed by the using obtained data. Then the model results were compared with both the experimental data and the empirical models available in literature. The results obtained by the method of artificial neural networks indicate that the modeling results are highly agreeable with the experimental ones.

REFERENCES

1. K. Kahveci, A. Cihan – *Focus on food engineering research and developments.* Nova Science Publishers, New York, USA, (2007).
2. K. Movagharnejad, M. Nikzad – *Modeling of tomato drying using artificial neural network.* Computers and Electronics in Agriculture, 59 (1-2), 78-85, (2007).
3. G. Page – *Factors influencing the maximum rates of air-drying shelled corn in thin layers.* Unpublished MS dissertation, Purdue University, Lafayette, Indiana, USA, (1949).
4. S.M. Henderson, S. Pabis – *Grain drying theory I, temperature effect on drying coefficient.* Journal of Agricultural Engineering Research, 6, 169–174, (1961).
5. Y.I. Sharaf-Eldeen, J.L. Blaisdell and M.Y. Hamdy – *A model for ear corn drying.* Transactions of the ASAE, 23 (5), 1261–1265, (1980).
6. A. Cihan, K. Kahveci, O. Hacihafizoglu – *Modelling of intermittent drying of thin layer rough rice.* Journal of Food Engineering, 79 (1), 293–298, (2007).
7. U. Akyol, K. Kahveci, A Cihan – Determination *of optimum drying conditions and simulation of drying in a textile drying process.* Journal of the Textile Institute, 104 (2), 170-177, (2013).
8. A. Durak – *Konvektif bir kurutma prosesinin yapay sinir aglari ile modellenmesi.* Master's thesis, Namik Kemal University, Tekirdag, Turkey, (2012), in Turkish.