عنوان مقاله:

Analytical evaluation of spatially distributed temperature and moisture of cylindrical carrot during convective drying

محل انتشار:

چهاردهمین کنگره ملی مهندسی شیمی ایران (سال: 1391)

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خلاصه مقاله:

The aim of the present work is the formulation of a theoretical model describing the simultaneous heat and mass transfer during convective drying. The system of unsteady state partial differential equations modeling the behavior of a cylindrical shaped vegetable has been solved by employing new solution approach. The innovation introduced in this study is represented with the procedure of temperature and moisture predictions. The temperature and moisture history are introduced for varying values of air temperature, Biot number and relative humidity. Simulations, carry out in different drying conditions, illustrate that Biot number and relative humidity of air are more effective than air temperature. Comparison of published experimental results and model predictions shows good agreement

کلمات کلیدی:

heat and mass transfer; convective drying; mathematical model

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