

Title Effective Moisture Diffusivity of Onion Slices undergoing Infrared Convective Drying
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Abstract

Drying experiments of onion slices (6 mm thickness) were carried out by using infrared convective drying. Infrared convective drying of onion slices was observed to be a falling rate process. The average effective moisture diffusivity of onion slices ranged between 0.2514×10^{-10} and $0.3233 \times 10^{-10} \text{ m}^2 \text{ s}^{-1}$. The values of average effective moisture diffusivity increased for the same values of drying air temperature and air velocity as applied radiation intensity was increased. Average effective moisture diffusivity decreased at all air temperature and applied radiation intensity with increase in air velocity. The activation energy in infrared convective drying between 5.06 and 10.63 kJ mol^{-1} . It has been indicated that decrease in energy of activation caused an increase in drying rate.