

Abstract

“*Bhim Kol*” (*Musa balbisiana*) is a wild variety of banana grown in the north east regions which is well known for its medicinal and therapeutically value. Published report shows that the fruit is having the potential to act as an ingredient for instant baby food. The present study was planned to study the effect of different pretreatment on drying characteristics of banana slices at three drying condition. Banana slices were pretreated with eight different pretreatments viz. hot water blanching(T1), steam blanching (T2), Acid treatment (T3), Sulphite treatment(T4), Freezing treatment (T5), blanching followed by freezing treatment (T6) , Ultrasonication treatment (T7), Blanching followed by ultrasonication treatment (T8) prior to drying. Slices were dried with hot air at 50°C and 70°C and vacuum drying at 70°C. Texture profile, change in color and shrinkage was measured after the drying. The drying was done for 10h, 7h and 10h for 50°C, 70°C and vacuum drying. The moisture content of some pretreated sample increased during pretreatment. The drying characteristics of various pretreatment were studied by estimating the moisture content at regular interval of time. The rate of drying was found to be maximum in hot water blanched sample followed by freezing.. The experimental data were modelled for one empirical model (Page’s model) and one theoretical model (Diffusion model) and the prediction was done using estimated model parameters are found to be well fitted. The low values of SSE, RMSE and high values of R² also agree with the findings. Diffusivity coefficient was also estimated using diffusion model coefficient and the effective moisture diffusivity varied from 5.003E-10 to 9.883E-10 at 50°C, 1.013E-09 to 6.753E-10 at 70°C and 2.476E-10 to 4.874E-10 at 70°C for Vacuum dried sample. One way ANOVA was also carried out to see the effect of pretreatment on drying process. Page’s Model drying constant ‘k’ was taken as the indicator for drying process. Significant difference was observed on drying constant of different pretreated banana slices.

Key words- Bhim kol, pretreatment, blanching, freezing, ultrasonication