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Effect of osmotic agent (sugar) on weight loss and solid gain of banana

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ABSTRACT : Osmotic dehydration is the process of removal of water by immersion of water containing cellular solids in a concentrated aqueous solution of sugar or salt. This results in intermediate moisture product with lower water activity. At low water activity, most of chemical reactions, which deteriorate the food, growth and toxins production by microorganism, are ceased. The experiments were conducted to characterize the osmotic dehydration of banana with respect to drying behaviors and the quality of dehydrated product with syrup concentrations (50, 60 and 70^0 B), slice thickness (6mm, 8mm and 10mm) and time of immersion (1 hr interval up to 12 hrs). The fruit to solution ratio was taken as 1:5(w/v). The maximum amount of weight reduction (g) was found at lower concentration 50^0 B for 10 mm slices and minimum amount of weight reduction (g) was found at lower concentration 70^0 B for 6 mm slices. The maximum amount of water reduction 50.97 % was found at 70^0 B and 6 mm thick slices. The minimum amount of water reduction 39.83 % was found at 50^0 B and 10 mm thick slices. The minimum amount of solid gain 3 % was found at 50^0 B and 6 mm thick slices. The maximum amount of solid gain 5.81 % was found at 70^0 B and 10 mm thick slices. The maximum amount of weight loss 54.42 % was found at 70^0B and 6 mm thick slices. The minimum amount of weight loss 43.79 % was found at 50^0B and 10 mm thick slices.

KEY WORDS : Osmotic dehydration, Weight loss, Solid gain, Banana

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