EVALUATION OF OSMOTIC PROCESS IN COMBINATION WITH COATING ON DRYING BEHAVIOR OF APPLE

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ABSTRACT

Osmotic dehydration, which is a method for partial water removal from fruits, involves friut immersion in a smotic solution. The process has been used to produce intermediate moisture foods (IMF) with the help of combined preservation methods. The major disadvantage of osmotic dehydration, limiting its applications to food, is the penetration of osmotic substances inside the food. One of the ways to reduce this penetration is the use of eddible coating on the surface of foodstuffs. Coating generally can be defined as thin layers of edible material applied on the surfaces of foods. Combination of coating and osmotic treatments efficiently decreases the penetration of solute inside the food .The aim of this work was to determine the effect of carboxymethylcellulose(CMC) coating on the mass exchange during osmotic dehydration of apples and its effect on the quality of final product. To determine the optimum operating conditions, several factors such as immersion time and osmotic solutions concentration [glucose syrup (30, 40 and 50%), salt (2, 4 and 6%)], coating agent concentration (0.5, 1, 1.5 and 3%) were investigated. Air-dried (control), Osmosed , and coated-osmosed samples were compared in view of Water Loss (WL), Solids Gain (SG) and Weight Reduction (WR). The results show that the optimum operating conditions is the coating solution of the concentration 1%, the glucose syrup and salt solution of the concentration 50% +2% for 180 min.