# EFFECT OF IMMERSING IN DIFFERENT CONCENTRATIONS OF CALCIUM CHLORIDE SOLUTION IN THE SENSORY, TEXTURE AND REHYDRATION IN DEHYDRATION OF SWEET POTATOES

By

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# ABSTRACT


## EFFECT OF IMMERSING IN DIFFERENT CONCENTRATIONS OF CALCIUM CHLORIDE SOLUTION IN THE SENSORY, TEXTURE AND REHYDRATION IN DEHYDRATION OF SWEET POTATOES

This study is carried out to determine the effect of different concentrations of calcium chloride solution on texture of dehydrated sweet potatoes after rehydration. This study also involves the comparison of the rehydration ratio and to evaluate the acceptability of rehydrated sweet potatoes obtained. Sweet potatoes immersed in 0.4% concentration of calcium chloride gave greater firmness of dehydrated sweet potatoes. The optimum time for rehydration process was 30 minutes of dehydrated sweet potatoes. Decreasing the duration time of rehydration process gave the lowest rehydration ratio of dehydrated sweet potatoes. Sensory evaluation was carried out using Hedonic scale to evaluate the acceptability of rehydrated sweet potatoes in terms of colour, appearance and firmness. . The analysis of variance (Duncan's Multiple Range Test) showed that there were significant different in term of colour, appearance and firmness of rehydrated sweet potatoes at 5% level. The means scores indicated that the sweet potatoes immersed in 0.4% concentrations of calcium chloride were more acceptability as compared to samples immersed in 0.2%, 0.6% and 1.0% concentrations of calcium chloride solution respectively. The Correlation Coefficients Analysis data showed that the scores for firmness were positive and had good correlation, where the R-value was 0.797 between sensory evaluation and texture analyzer.

# CHAPTER 1

# INTRODUCTION

Dehydration is a method for preserving food. It lowers the costs of packaging, storing and transportation by reducing both the weight and volume of the final product. The nutritive value of food is affected by dehydration process. Vitamin A and C are destroyed by heat and air. Using sulfite treatment prevents the loss of some vitamins, but causes the destruction of thiamine. The main purpose of dehydration is to extend the shelf life to foods by reduction in water activity. This inhibits microbial growth and enzyme activity (Torrey, 1974).

The rehydration of dehydrated foods frequently is difficult or unsatisfactory. The process of rehydration after drying is not a simple reversal of drying mechanism. Not only are some of the changes produced by drying are irreversible, but also the swelling of outside layer as water is reabsorbed puts severe stresses on the softened outer layers. Previously crushed and crumpled structures are unable to come back to their original configurations, and solutes in the tissue leach out into the rehydration water instead of remaining in the tissue (Torrey, 1974).