

EFFECT OF SELECTED PRETREATMENTS ON FINAL QUALITY OF DEHYDRATED FRUITS

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Pretreatments are important operations for preserving the final quality of dehydrated fruits. There is a large variation in the quality of dehydrated fruits prepared using frequently applied pretreatments. Therefore, the aim of this study was to determine the effect of selected pretreatments on the quality of dehydrated banana, papaya, guava, and pineapple for further improving final product quality. The experimental design was Completely Randomized Design with three replicates. Initially, the selected fruits at ideal maturities were prepared by slicing into predetermined thicknesses and were then pretreated with the selected chemical (ascorbic acid, citric acid, NaHCO₃, NaCl, sodium metabisulfite, and sugar at different concentrations) and physical (water and steam blanching) methods. Each fruit category was subjected to five pretreatments including control (non-pretreated). Thereafter, all the samples were dried in a convection dryer at 55 °C for 8 – 10 hours until reaching the 16 – 20% (w.b.) of moisture content. After drying, the quality of fruit samples was evaluated based on the colour difference (ΔE), rehydration ratio, shrinkage (%), and sensory properties. According to the results, significant differences ($p < 0.05$) were found among the quality parameters in the dehydrates obtained after different pretreatments. The dehydrated banana, papaya, guava, and pineapple pretreated by immersing in solutions of 0.2% citric and ascorbic acid for 2 minutes, 50% sucrose and 2% NaCl for 4 hours, 0.1% NaHCO₃ (w/v) for 3 minutes and 60% sucrose for 5 hours respectively, had the best quality characteristics (lower colour change, higher rehydration ratio, lower shrinkage, and higher sensory acceptance). Variations in pretreatments significantly affected the final quality. The selection of appropriate pretreatments and their optimization are vital to improve the final quality of dehydrated fruits.

Keywords: Dehydrated fruits, Pretreatment, Quality, Rehydration ratio, Shrinkage