

EFFECTS OF COMBINED COATING, AIR AND MICROWAVE DRYING ON THE TEXTURE AND REHYDRATION CHARACTERISTICS OF APPLE SLICES

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ABSTRACT

The effect of coating, air and microwave drying on the texture and rehydration characteristics of *Golden Delicious* apple slices (22 mm diameter and 4 mm thickness) was investigated. To prevent undesirable enzymatic reactions and to improve porous structure blanching, pretreatment was carried out in hot water (80°C for 1 min). To induce a porous structure during microwave treatment, coating method by starch (suspension), pectin and carboxy methyl cellulose (CMC) solution (20 g/l) with and without CaCl₂ (10 g/l) was used. A puncture test was used to analyze the effects of these processes on texture. Rehydration in distilled water was also studied. Coating, air-drying (70°C, 1 m/s) and microwave treatment (300 W, 10 s) resulted in the production of puffed and porous products. Coating had a beneficial effect on the structure of samples after microwave treatment. Adding CaCl₂ to the coating solution improved structural properties and prevented central heating phenomena. Microwave treatment increased rehydration capacity of samples but reduced texture strength after the rehydration.