Antibrowning effects of various pretreatment methods on dried apple samples

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Abstract

The aim of this research was to find the most effective antibrowning agent for apple samples based on colour changes, rehydration characteristics and drying kinetics under uniform drying conditions. Colour changes were observed with two different methods, using image analysis system and using chromameter. 'Florina' cultivar apple samples were pre-treated and dried in laboratory tray drier at temperature of 60°C. The applied chemical pre-treatments were dipping in 0.5% ascorbic acid solution; 0.3% *L*-cysteine solution; 0.1% 4-hexyl resorcinol solution and 1% sodium metabisulfite solution. The drying temperature used was 60°C at airflow velocity of 1.5 $m.s^{-1}$. The Page's mathematical model was used to calculate the drying kinetic parameters. The obtained results showed good agreement with experimental data. According to drying time, rehydration and colour characteristics, the best result was achieved when samples were pre-treated with 4-hexyl resorcinol.