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Optimization of osmotic dehydration process for kinnow slices using Response surface methodology

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Response Surface Methodology was used for quantitative investigation of water and solid transfer during osmotic dehydration of kinnow slices in sugar solution. Effects of temperature (45-65°C), Processing time (60–180 minutes), sugar concentration (50-70°Brix), and solution to sample ratio (1:5 to 1:15) on osmotic dehydration of kinnow slices were estimated. Quadratic regression equation describing the effect of these factors on the water loss and solid gain were developed. It was found that effect of temperature and sugar concentration was more significant on the water loss than the effects of processing time and solution to sample ratio. The osmotic dehydration effect was optimized for water loss, solute gain, and weight reduction. The optimum conditions were found to be temperature 64˚C, processing time 90 minutes, sugar concentration 54.5°B and solution to sample ratio 1:10. At these values, water loss, solid gain, and weight reduction were found to be 54.19 (g/100g initial sample), 28.18 (g/100g initial sample), and 26.01 (g/100g initial sample) respectively.

Biography

Vikas Bansal has completed his Master's degree at the age of 27 years from Sant Longowal Institute of Engineering & Technology (Deemed University), Longowal (Punjab). He has five year of dairy based industrial experience. At present, he is pursuing his Ph.D from Sant Longowal Institute of Engineering & Technology (Deemed University), Longowal (Punjab).

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Assessment of storage stability of aerobically packaged chicken meat biscuits during storage at 30±2^{0}C

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Among the bakery sector, biscuit is one such product which is relished by all segments of society throughout the world. The total production of biscuits in India is estimated to be around 30 lakh MT, the organized sector accounts for 65% and the unorganized sector accounts for 35% of the total industry volume. However, nutritional value of these products is very low. So to impart nutrition in biscuits, attempts were made for the incorporation of chicken meat. The storage study for physico-chemical and textural quality, microbiological stability and sensory acceptability were also conducted following standards procedures. The storage study revealed very well acceptable quality of chicken biscuits during storage of 30 days under aerobic conditions. Among physico-chemical characteristics pH and ash decreased non significantly while decrease in fat and protein was significant ($P<0.05$). However, other parameters such as moisture and water activity increased significantly ($P<0.05$) but TBA and FFA non significantly both in control and chicken biscuits. Textural values during storage period revealed non significant decrease in work of shear and shear force value. Biscuits were quite stable against microbial contamination because only TPC was detected and noticed in increasing order as per the advancement of storage but the count was under limits. On sensory evaluation biscuits were found very well acceptable during entire storage time.

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