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Optimization of textural properties of predried and deep-fat-fried carrot slices as a function of process conditions

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Texture of food product is a significant physical phenomenon for consumer's preference. Thus textural changes of food materials should be considered during any food process. In this study it was aimed to investigate change of textural properties of carrot slices under influences of pre-drying and frying processes. Although main purpose of pretreatment was to decrease oil uptake by food material, our results indicated this desired target was achieved, textural change as a function of both combined processes' parameters was also examined to figure out preferableness of those carrot slices. Conventional drying was performed in an oven in which temperature and weight losses were controlled parameters. Another studied method for pre-drying was microwave technique in which weight loss was controlled variable. Oil temperature and process time were parameters of deep-fat-frying. Sunflower was used as frying oil. Response surface methodology was used for optimization of processes' parameters to achieve target values of textural properties for which sensory analysis was performed to determine at directly deep-fat-fried carrot slices. Carrot slice received the highest appreciation for studied textural properties were also measured instrumentally, and results were used target values in optimization processes. The developed models for pre-drying by conventional oven and deep-fat-frying and pre-drying by microwave oven and deep-fat-frying were found to display high success for prediction of interested textural responses. Models for latter one had better prediction ability compared to former one. Change in textural properties with process parameters were also figured out.

Biography

Cem Baltacioglu graduated with Bachelor of Science from Department of Food Engineering at Ankara University at 2016. He graduated with Doctor of Philosophy from Department of Food Engineering at Middle East Technical University at 2012. He is working as Assistant Professor at Nigde University.

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