

JOURNAL SUGGESTION SERVICE

Influence of infrared roasting process on the quality characteristics and acceptability of peanut kernels

Abstract

Roasting is one of the widespread methods for processing of nuts that significantly enhances the flavor, color, texture and appearance of products. In this research, the response surface methodology was used to optimize the roasting process over a range of infrared power (250–450W) and roasting times (10–30 min). The moisture content, color parameters (L, a, b and total color difference (ΔE)), textural characteristics (hardness and compressive energy), energy consumption and sensory evaluation (total acceptance) were determined after roasting and modeled by RSM. The L^* , a^* , b^* , ΔE , moisture content, hardness, compressive energy, energy consumption and sensory evaluation changed in the range of 42.75-59.16, 20.05-24.02, 12.08-16.34, 7.45-23.37, 1.91-5.79 %, d.b, 45.01-85.73 N, 258.08-550.08 N.s, 0.0472-0.2599 kW.h and 3.42-4.36, respectively. Increasing in roasting IR power and time caused increasing in the energy consumption, a^* , b^* and ΔE values. The L^* value, moisture content, hardness and compressive energy also decreased with increasing roasting IR power and time. The full quadratic model developed by RSM adequately described the changes in the b^* value, moisture content and hardness. The result of RSM analysis showed that all color and textural parameters could be used to monitor the roasting of peanut kernels in an infrared roaster, while application of RSM for developing a predictive model that described the total acceptance changes during roasting of peanut kernels was not successful. To obtain the desired color, moisture, texture and acceptance, the optimum roasting range for production of snack was determined as 370 W for 20 min.

Keywords: Peanut kernels, IR roasting, RSM, Energy consumption

Criteria: Journal suggestion based on similar abstract or “**paper-match**”. We provide 6 journal names that indexed in Scopus and/or Web of Science.

No	Journal Name	Publisher	WoS-Impact Factor	Scopus-Q	Short Description
1	Journal of Food Processing and Preservation	Wiley	0.568	Q2	The journal Encompassing chemical, physical, quality, and engineering properties of food materials, the Journal of Food Processing and Preservation provides a balance between fundamental chemistry and engineering principles and applicable food processing and preservation technologies. Reason: Top paper-match, open access, rapid publication.
2	LWT- Food Science and Technology	Elsevier	1.534	Q1	Journal publishes innovative papers in the fields of food chemistry, biochemistry, microbiology, technology and nutrition. The work described should be innovative either in the approach or in the methods used. Reason: paper match, elsevier provide reviewer suggestion.
3	Food Science and Technology Research	Karger	0.459	Q2/Q3	Coverage ranges from chemistry, biotechnology, nutrition, physical and physicochemical properties, processing, cooking, unit operations, analysis, measurements and control, safety and health to marketing and environmental aspects related to food. Reason: Paper Match and free
4	Nutrition & Food Science	Emerald Group Publishing	0.307	Q3	This journal covers Food safety and hygiene, Attitudes to food and nutrition, Healthy eating initiatives Marketing, distribution and legislative issues, Nutrition,

					social status and health, Growth and new developments in vegetarian diets, Food preparation and contamination, Consumer choice, preferences, and concerns, Family health and welfare, Nutritional value of fast foods. Reason: Paper Match, new journal (2005) and not selective.
5	Research in Agricultural Engineering	Czech Academy of Agricultural Sciences	0.529	Q3	Scientific studies covering all areas of agricultural engineering, agricultural technology, processing of agricultural products, countryside buildings and related problems from ecology, energetics, economy, ergonomics and applied physics and chemistry. Reason: Paper Match, Fast Process and Easily to be accepted.
6	International Journal of Food Engineering	Walter de Gruyter	0.391	Q2/Q3	International Journal of Food Engineering is devoted to engineering disciplines related to processing foods. The areas of interest include heat, mass transfer and fluid flow in food processing; food microstructure development and characterization; application of artificial intelligence in food engineering research and in industry; food biotechnology; and mathematical modeling and software development for food processing purposes. Reason: Paper Match and rapid processing

Note: We suggest the journal name from different publishers.