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Necessity of Paying Attention to Sesame Oil Production Safety

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Sesame oil, known as Queen Oil, is one of the most nutritious sources. Raw sesame oil contains compounds, such as waxes, free fatty acids, and unsaturated fatty acids. It also contains antioxidants such as vitamin E, gum, small particles, etc. (1, 2). Given the presence of anticancer compounds, such as antioxidants and unsaturated fatty acids, this foodstuff is recommended to patients with cardiovascular diseases (3). However, it should be considered that this oil, similar to all other liquid oils, has high potential for chemical and microbial spoilage due to factors, such as light, exposure to air, temperature, humidity of the environment, and microbial agents. Furthermore, Sesame oil causes hydrolysis and oxidation processes, which increases the necessity of observing the essential points during the production and maintenance. Generally, production of free radicals during the hydrolysis process is very harmful and causes diseases like cancer (4, 5). It should be noted that this oil is produced industrially and manually (in the presence of the customer). Regarding the industrial production, a large proportion of the factors involved in the process of corruption are eliminated or controlled in the purification process. Moreover, some natural antioxidants, such as vitamin E and A, reduced during purification, are added as antioxidants to prevent from corruption. However, in manual or so-called traditional methods that are performed in the presence of the customer, exposure to risk factors increases during the oil production and sometimes oil is packed in non-standard containers. Elimination or reduction of the harmful agents is not possible and ultimately endangers the consumers' health (6-10). Therefore, it is very important to monitor and pay attention to the traditional production centers and consumers regarding the safety of sesame oil production.

References

1. Ji J, Liu Y, Shi L, et al. Effect of roasting treatment on the chemical composition of sesame oil. LWT. 2019; 101: 191-200.
2. Brühl L. Fatty acid alterations in oils and fats during heating and frying. European Journal of Lipid Science and Technology. 2014; 116(6): 707-715.

3. Chen Y, Wu YJ, Deng TT. Detection and control of mustard and sesame as food allergens. In Handbook of Food Allergen Detection and Control. Woodhead Publishing Series in Food Science, Technology and Nutrition; 2015: 391-408.
4. Dobarganes C, Marquez-Ruiz G. Oxidized fats in foods. Current Opinion in Clinical Nutrition & Metabolic Care. 2003; 6(2): 157-163.
5. Hosseini H, Ghorbani M, Meshginfar N, et al. A review on frying: procedure, fat, deterioration progress and health hazards. Journal of the American Oil Chemists' Society. 2016; 93(4): 445-466.
6. Hu R, He T, Zhang Z, et al. Safety analysis of edible oil products via Raman spectroscopy. Talanta. 2018; 191: 324-332.
7. Shahidi F, Wanasundara UN. Methods for measuring oxidative rancidity in fats and oils. In: Akoh CC, Min DB, Eds. Food Lipids, Chemistry, Nutrition, and Biotechnology. 2th ed. Boca Raton: CRC Press; 2002: 465-505.
8. Zhang L, Huang X, Li P, et al. Multivariate adulteration detection for sesame oil. Chemometrics and Intelligent Laboratory Systems. 2017; 161: 147-150.
9. Zhao F, Liu J, Wang X, et al. Detection of adulteration of sesame and peanut oils via volatiles by GC× GC–TOF/MS coupled with principal components analysis and cluster analysis. European Journal of Lipid Science and Technology. 2013; 115(3): 337-347.
10. Zhao X, Dong D, Zheng W, et al. Discrimination of adulterated sesame oil using mid-infrared spectroscopy and chemometrics. Food Analytical Methods. 2015; 8(9): 2308-2314.