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Effect of extraction method on sesame oil quality

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Abstract

Sesame has been consumed for centuries as flavoring ingredient in eastern Asian countries, especially Korea. Sesame seeds have been used as health food for traditional medicine to prevent disease in Asian countries for several thousand years. Sesame seed has higher oil content (around 50%) than most of the known oilseeds. Sesame oil is rich in monounsaturated and polyunsaturated fatty acids. Extraction of sesame has developed significantly over the years. The mechanical method was an early means of separation which was physical pressure to squeeze the oil out. Nowadays, solvent extraction becomes the commonly used commercial technique to recover oil from oilseeds. In this study, we investigated extraction efficiency and quality of oil affected by cultivars and extraction methods of sesame seed. Different variables were investigated; roasting temperature (170~220°C), extraction methods (solvent and physical pressure), forced ventilation system and cultivars. The Contents of B(a)P in sesame oil after roasting at 170~220°C were 0.30~2.53 ppm. When we introduced forced ventilation system during roasting, B(a)P Contents were decreased up to 36%. The Oil extraction efficiency on sesame seed was statistically depending on the cultivars and extraction methods. The oil extraction yields of solvent and physical pressure extraction were 56.3% and 44.6%, respectively. Many of sesame cultivars and genetic resources are linolenic acid content of less than 0.5%. The results supported that we have developed a safe and high quality sesame oil processing methods for small and medium-sized companies.

Keywords: sesame, oil quality, oil extraction

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